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INCOMES, SAVINGS AND NET WORTH

THE SAVINGS SURVEYS OF 1952-1954

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A third national survey of personal incomes and savings was carried out during the spring of 1954. This survey, like its predecessors of 1952 and 1953, is designed to enable us to build up a complete picture of the financial position and behaviour of individual persons or families, with the immediate objective of measuring the movements and distribution of savings and analysing its determinants.¹ In this article the principal results of the 1954 Survey will be compared with the corresponding estimates derived from the two earlier surveys.² By taking repeated surveys, some of the basic distributions of economic variables and the inter-relationships between them can be established more securely, since many of these are fairly stable in the short run. Moreover, by examining the mutual consistency of the results of the three surveys, it is possible to gauge with more accuracy the reliability and limitations of any one of them separately. However, a comparison between the surveys also serves a much more positive purpose. Despite their limitations, the surveys are sufficiently sensitive to record year to year changes in many of the leading variables in which we are interested. Thus, we are in a position to observe directly the changes which are taking place within the personal sector of the economy, which may prove of great value in analysing aggregate consumer behaviour.

The first three sections of this article will be devoted to the subjects of incomes, savings and net worth respectively. Net worth is an approximation to the stock of consumers' capital, and the estimates given will be the first of their kind for this country. The fourth section of the article will contain a discussion of some of the technical problems associated with the surveys. This will take the form of an examination of survey techniques, response rates and sample structures. While it is necessary to go into these problems for any survey, they are of a statistical rather than an economic nature and may be of more limited interest. However, before any of the

¹ A detailed analysis of the determinants of savings, chiefly based on the results of the 1953 Survey, is contained in the article by L. R. Klein in this issue.

² The results of the 1952 Survey have already been described in a series of articles by H. F. Lydall in the *BULLETIN* between November-December 1952 and July-August 1954. Some of the main findings of the 1953 Survey have also been published in the *BULLETIN*: see the article by T. P. Hill, L. R. Klein and K. H. Straw in the issue of February, 1955, pp. 89-126.

results of the surveys can be presented, there is a certain amount of background information which must be provided.

Each of the surveys relates to the financial year ending in the April of the year in which the survey is taken. The fieldwork for the 1954 Survey actually extended from late in April to early June 1954. The elementary unit for the surveys is the 'income unit', which consists of a single person aged 18 or over, or of a married couple—children under 18 being included in the income unit of their parents or guardians. The coverage of the surveys is confined to income units living in private dwellings in Great Britain. There are estimated to be 22 million such income units and by multiplying by this factor the appropriate averages per income unit given by the surveys the corresponding national aggregates can be obtained. The tabulations for the 1954 Survey are based on 2463 successful interviews with income units,¹ the response rate achieved being 67 per cent. This is a relatively low response although it marks a very slight improvement on the 1953 Survey.

I INCOMES

The concept of gross income used in the surveys covers money income from every possible source—wages, profits, rent, social security benefits and so on. Income in kind is excluded with two exceptions. The first is the value of home produce consumed by farmers, and the second the imputed rent on owner occupied houses. The latter is taken to be equal to the net annual value of the property for income tax purposes. This item was not included as a component of gross income in the 1952 Survey and it is estimated that mean gross income from that Survey has to be increased by about £5 to make it conceptually comparable with the figures from the two later surveys.²

The period covered by the three surveys—April 1951 to April 1954—has been one of steadily rising incomes. There have been successive rounds of wage and salary increases, while profits and dividends also began to rise rapidly during the latter part of the period. These increases are reflected by the surveys, although the overall results do not reveal a smooth upward trend in incomes. Average gross income per income unit was £424, £434 and £477 according to the 1952, 1953 and 1954 surveys respectively. The increase between 1952 and 1953 is almost negligible when allowance is made for the change in the definition of gross income between the surveys, while the increase between 1953 and 1954 was no less than 10 per cent.³ Neither increase is easily reconciled with information available from outside sources and a fairly steady rate of increase over the three years would be more plausible.

By far the most important single component of gross income is income

¹ The 959 income units in the lower stratum of the Survey carry ten times the weight of the 1504 income units in the upper stratum, because of the different sampling fractions used in the two strata. See below pp. 157-159, for a discussion of sampling procedures and methods of stratification.

² There were two other minor changes in definition between the 1952 and 1953 surveys: see BULLETIN February 1955, p. 123.

³ Whenever a year is specified with reference to the surveys' results, it is to be understood to refer to the fiscal or financial year to which the surveys relate, and not to the calendar year.

from employment, *i.e.* wages and salaries.¹ The surveys indicate that roughly three quarters of personal income is derived from this source, although official national income estimates suggest a rather smaller proportion. However, the surveys are able to tell us further how this income is distributed amongst the population. It appears that about four-fifths of all income units actually receive an income from some form of employment (Table I), and it is interesting to see that the surveys estimate that their

TABLE I
The Components of Gross Income

Type of income	Mean incomes for all income units in sample			Percentages of income units actually receiving each type of income			Mean incomes for income units actually receiving each type of income		
	1952	1953	1954	1952	1953	1954	1952	1953	1954
	£	£	£	%	%	%	£	£	£
Income from employment	327	339	362	81	80	81	404	422	444
Income from self-employment ¹	58	35	46	(11)	(10)	12	(525)	(350)	380
Interest, dividends, rent	17	21	29	30	47	55	57	44	52
Government transfers ...	25	35	35	43	50	53	57	69	67
Private transfers ...	4	3	2	3	2	4	133	143	48
Gross Income ² ...	424	434	477						

¹ The bracketed figures for income from self-employment in 1952 and 1953 in the second and third parts of the table are only approximate as a result of changes in methods of classification between the surveys.

² Components do not add up to total gross income exactly because of processing and rounding off errors.

average income from this source has increased at a fairly constant rate over the three years, despite the irregular increases in mean gross income observed above.

There have been marked changes in the distribution of employment income, even within the relatively short space of time covered by the three surveys. The distributions are given in Table II. The changes observed are highly significant in a purely statistical sense² and are roughly what one would expect to have occurred. It is obvious from a mere inspection of these distributions that there has been an appreciable upward shift in employment incomes. For example, whereas twenty per cent of all income units in 1952 had an employment income of more than £500, the corresponding percentage according to the 1954 Survey was almost thirty per cent. An interesting development is that the distribution of employment income seems to have become much flatter and also slightly less skewed during the period covered.

Income from self-employment, *i.e.* the profits from farms and unincorporated businesses and the earnings of self-employed professional persons—has fluctuated in a somewhat erratic manner, according to the surveys. The

¹ Retirement pensions from previous employment are also classed as a form of employment income.

² The statistical tests used were χ^2 tests of homogeneity, but it is difficult to state exact probabilities because of the complicated sample design. This problem will be considered in more detail in the second part of this article. See pp. 164-167 below.

TABLE II
Distributions of Employment Income¹

Income from employment	Percentages of income units :—		
	1952	1953	1954
£1— 99	5.2	5.0	5.7
£100—199	10.1	8.0	8.2
£200—299	12.7	11.5	9.9
£300—399	19.5	16.3	13.9
£400—499	13.8	15.1	14.2
£500—599	8.4	10.5	12.0
£600—699	4.5	6.9	7.2
£700—799	2.6	2.2	4.4
£800—999	2.1	2.9	3.6
£1,000 and over	2.1	2.0	2.5
No employment income ...	19.0	19.7	18.5
Total	100	100	100
Mean employment income (£)	327	339	362

¹ Employment income includes pensions from previous employment. According to the 1954 Survey, 3½ per cent of the income units in the sample received retirement pensions of this kind without receiving any income from current employment. Of these nearly a half fell in the lowest class interval in the above table. A further 1½ per cent of the income units received incomes both from current and past employment.

principal reason for this was an exceptionally large drop in the total of farm incomes which was reported between the 1952 and 1953 surveys. This was partly due to a fall in the proportion of farmers in the sample.¹ The reduction in the estimate of total farm income must have been largely spurious and there can be little doubt that the surveys have failed to provide very reliable estimates of average income from self-employment and, in consequence, of any changes therein. It is clear therefore that the explanation for the absence of any real increase in average gross income between the 1952 and 1953 surveys is to be found in the grossly exaggerated and possibly illusory fall in self-employment income, which very nearly managed to cancel out the whole of the increases obtained in the other three principal categories of income. Since only about a tenth of income units have an income from self-employment, and for only half of these does it constitute the principal source of income, no distributions of self-employment income will be given.

One of the striking features of Table I is the substantial increase between the surveys in the proportion of income units which reported some unearned income. There are at least two reasons for this. The first is simply the change in the definition of income between the 1952 and 1953 surveys to include the imputed rent on owner-occupied houses. The effect of this is clearly seen in Table III in the form of a sudden expansion in the £10-49 income bracket, and the whole of the increase in the surveys' estimates of total unearned income between the two surveys could be ascribed to this change in definition. The second reason is that a more determined effort was made in the later surveys, particularly in the 1954 Survey, to ensure that small amounts of

¹ See the BULLETIN, February 1955, pp. 93-95 and Table XXIII below.

TABLE III
Distributions of Unearned Income: Rent, Interest and Dividends

Rent, interest and dividends	Percentages of income units :—		
	1952	1953	1954
£1— 4	13.8	15.0	19.4
£5— 9	5.5	6.6	7.5
£10— 49	5.8	18.1	19.9
£50— 99	1.8	3.7	3.8
£100— 499	2.4	3.0	3.4
£500 and over	0.9	0.5	1.2
No unearned income	69.8	53.1	44.9
Total	100	100	100
Mean unearned income (£)	17	21	29

interest on liquid assets were included by informants in their stated incomes. The effect of this can also be seen in the lowest income brackets in Table III. The increase in the proportion of income units having an unearned income of more than £50 from 5.1 per cent in 1952 to 8.4 per cent in 1954, may also partly represent an improvement in survey technique, since more care was taken in the later surveys to see that respondents did not give a net figure for dividends etc., whenever these had had tax deducted at source. Finally, of course, at least some of these increases will reflect the upward trend in dividends on industrial equities during the period.

There has also been an appreciable increase in the proportion of income units receiving some form of government transfers, particularly between 1952 and 1953 (Table IV). While there is undoubtedly a tendency for more and more income units to receive some kind of social security benefit, the increase between the two earlier surveys appears to be larger than can be reasonably expected on general grounds. However, it should be remembered that there is a wide variety of these transfer payments, not all of which constitute regular sources of income. For instance, an influenza epidemic might be reflected in the surveys' results in the form of a substantial increase in the proportion of income units having received government transfers as a result of the large number of sickness benefits paid. Similar effects could be produced by a trade recession through the unemployment benefits. The increase observed may be partly attributable to variable factors such as these, or it may be partly due to the upward trend in number of pensions, family allowances, etc., which are being paid, or it may even reflect improvements in survey technique or simply random sampling errors. The increase between the 1952 and 1953 surveys in the average amount of payment received by those with a government transfer is due to the increased rates of pensions and allowances which were introduced in September 1952.

The remaining component of gross income consists of private transfers, which are received by only a tiny fraction of the population. The estimates of these which are shown in the third part of Table I have large sampling errors and are only included for the sake of formal completeness.

TABLE IV

Distributions of Government Transfer Payments: Pensions, Benefits, Allowances, etc.

<i>Government transfers</i>	<i>Percentages of income units:—</i>		
	<i>1952</i>	<i>1953</i>	<i>1954</i>
£1—19	13.5	14.2	11.0
£20—39	7.8	7.6	12.0
£40—59	2.7	3.6	5.8
£60—79	9.0	3.8	3.5
£80—99	2.4	8.5	7.1
£100—119	2.1	3.1	4.3
£120—139	3.0	4.3	2.1
£140 and over	2.5	5.1	6.9
No government transfers ...	57.0	49.9	47.3
Total	100	100	100
<i>Mean government transfers (£)</i>	<i>25</i>	<i>35</i>	<i>35</i>

Comparisons with outside sources seem to indicate that with the exception of government transfers in 1953 each of the principal components of income shown in the first part of Table I is subject to a downward bias. This is less serious in the case of employment income than for self-employment income and unearned income. While there has been a distinct improvement in the surveys' estimates of unearned income, the estimate of self-employment income is still somewhat erratic. The 1954 Survey is probably the most accurate in estimating the proportion of income units receiving each type of income, but this figure is not necessarily very meaningful since very small amounts of income may be involved. For example, every person who has a Post Office Savings Bank account has some unearned income in the form of interest, although in most cases the amount involved will be quite negligible. For this reason, it is essential to know the properties of the entire distribution and not simply the number of people or income units with or without a particular type of income.

By summing for each individual income unit all the different types of income considered in the preceding paragraphs, we obtain the distributions of gross income shown in Table V. Distributions of income net of direct taxes are also shown in Table V. Income tax and surtax are worked out for each separate income unit at the editing stage of the surveys and are not asked for directly.¹ Employees' contributions for national insurance together with the contributions of the self-employed are treated as direct taxes and deducted in order to obtain net income.

Because old age or widows' pensions constitute the principal, and in many cases the only, source of income for a substantial minority of income units, the distributions of gross and net income display a secondary mode in the second lowest income group. The bimodality of the distributions has become more pronounced from survey to survey, especially in the case of the

¹ A mistake was made in working out surtax in the 1952 Survey which led to an over-estimate of the net income retained by surtax payers. Cf. BULLETIN, February 1955, pp. 125-126.

TABLE V
Distributions of Gross and Net Income

Income group	Percentages of income units:—					
	Gross income			Income net of tax		
	1952	1953	1954	1952	1953	1954
£0— 99	7.8	5.4	4.5	8.1	5.7	4.6
£100— 199	16.2	17.3	15.7	17.6	18.5	16.8
£200— 299	14.2	13.7	12.2	18.3	16.1	13.3
£300— 399	20.6	17.0	14.4	20.9	17.6	15.8
£400— 499	16.0	16.5	15.2	15.3	15.8	15.0
£500— 599	9.8	12.2	12.8	8.2	12.2	14.3
£600— 699	5.4	7.8	9.4	5.3	6.0	8.4
£700— 799	3.1	2.9	5.4	2.5	3.5	4.6
£800— 999	2.9	3.9	5.2	1.4	2.5	4.2
£1,000—1,499	2.3	2.1	3.5	1.5	1.2	2.2
£1,500—1,999	0.8	0.5	0.9	0.4	0.5	0.4
£2,000 and over	0.9	0.9	0.9	0.4	0.4	0.4
Total	100	100	100	100	100	100
Mean income (£)	424	434	477	367	392	429

net income distribution which, superficially at least, was unimodal in 1952. Since the distributions have tended to become flatter, a tendency which has already been noted for employment income separately, the secondary mode may be developing into the principal one. Indeed, it would be not unreasonable to treat the 'pension' mode as the principal mode in the distributions obtained from the 1954 Survey, particularly for net income.

Considerable numbers of income units have been moving into the higher income groups. For example, whereas in 1952, 25 per cent of income units had a gross income of more than £500, by 1954 the proportion had increased to 38 per cent. The corresponding figures on the basis of net income are 20 per cent and 34 per cent respectively. This general upward movement can be illustrated by the changes in the median and quartiles of the income distributions (see Table VI). The percentage increase between 1952 and 1954 was greatest for the upper quartile and smallest for the lower quartile, although the proportionate increases between 1953 and 1954 were about the

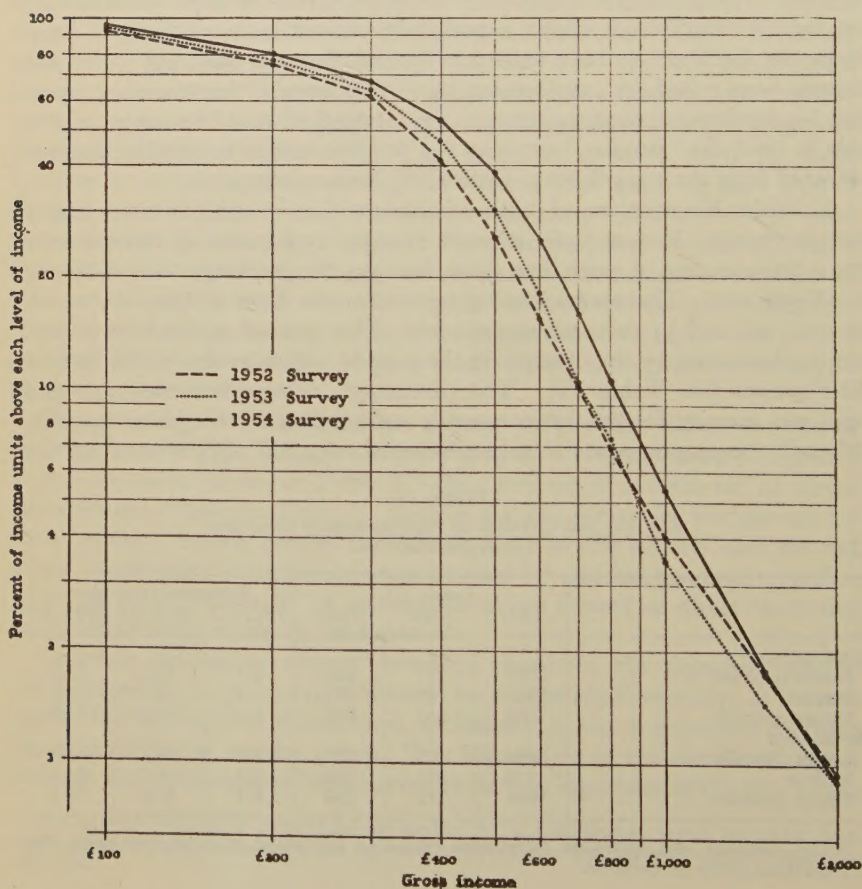
TABLE VI
Medians and Quartiles of Distributions of Gross and Net Income¹

	Levels (£)			Percentage increases		
	1952	1953	1954	1952-53	1953-54	1952-54
Gross Income						
Lower quartile	207	217	240	4.8	10.6	15.9
Median	358	381	421	6.4	10.5	17.6
Upper quartile	503	543	603	8.0	11.0	19.9
Net Income						
Lower quartile	196	205	227	4.6	10.7	15.8
Median	329	355	396	7.9	11.5	20.4
Upper quartile	466	511	566	9.7	10.8	21.5

¹ The medians and quartiles have been obtained by linear interpolation using the distributions given in Table V.

same for both the quartiles and the median. In money terms, there are very marked differences between the increases in these statistics; thus, the upper quartile and median have increased between 1952 and 1954 by three times and twice the amount of the increase in the lower quartile in both the gross and net income distributions. This means, of course, that there has been an appreciable increase in the dispersion of incomes, the interquartile range increasing by nearly £70 between 1952 and 1954 in both distributions. It is rather curious that the median falls almost exactly midway between the quartiles in each of the years in both distributions, since normally this would be taken to indicate absence of skewness. It does, however, illustrate the basic similarity of structure of the distributions, despite their bimodality and the appreciable changes in income which have been taking place.

DIAGRAM A
Cumulative Distributions of Gross Income



The cumulative gross income distributions are shown in Diagram A plotted on a double logarithmic scale, since this is a convenient and conventional method of comparing the distributions in the upper ranges of income. The frequency over £2,000 is almost the same in all three years so that the curves converge at this point. It is interesting to see that apart from the shift to the right in these curves which results from the upward movement in incomes, a much smoother curve has been obtained from the 1954 distribution.¹ The contrast between the 1953 and 1954 distributions is most pronounced in this respect. This is a good *prima facie* reason for regarding the 1953 distribution, or at least its upper tail, with a certain suspicion since cumulative curves in general do not tend to wander in the way that the 1953 curve does. Indeed, an inspection of the 1953 curve suggests that the distribution may be faulty in the range from £700 to £2,000, especially in comparison with the 1954 distribution.

An increase in the slope of the tails of these curves is generally interpreted as indicating a more equal distribution of income. A change of this kind can be detected between the surveys as a result of the general upward movement in incomes unaccompanied by any increase in the proportion of income units with incomes above £2,000. However, it is fairly clear that the surveys cannot estimate the frequency in this very top class interval with sufficient accuracy to give much support to generalisations which are partly based on it.²

II. SAVINGS

The revival of personal savings during the last few years has been observed with considerable interest in many quarters. The latest official national income estimates³ indicate that personal savings rose from £273 million in the calendar year 1951 to £690 million in 1952; a further increase to £910 million followed between 1952 and 1953, although the volume of savings does not appear to have increased subsequently, being in fact exactly the same in both 1953 and 1954. The savings surveys also suggest that there has been a marked revival in personal savings, although the volume of savings and the timing of the revival do not agree superficially with official estimates. However, when adjustments are made for differences in definition and coverage and both sets of estimates are put on a financial year basis, the survey and national income estimates may not be inconsistent with each other.⁴

The conventional definition of savings as the difference between net income and consumption has been used in the surveys. A more precise definition together with a discussion of some of the conceptual problems involved can be found in the article by L. R. Klein in this issue.⁵ However,

¹ Indeed, the cumulative curve for the 1954 Survey is very nearly a straight line for incomes above the mean.

² For this reason, not too much weight can be attached to the Pareto coefficients obtained by fitting straight lines to points above the mean, even though these display a tendency towards greater equality. The three co-efficients are in fact -2.36, -2.58 and -2.78 for the 1952, 1953 and 1954 surveys respectively.

³ *Preliminary Estimates of National Income and Expenditure, 1948 to 1954*, Cmd. 9423.

⁴ Cf. the article by L. R. Klein, *BULLETIN*, this issue pp. 177-179.

⁵ See also the article by H. F. Lydall, *BULLETIN*, Oct. and Nov. 1953, pp. 344-350.

savings are not in practice calculated in the surveys as a residual between net income and consumption¹ but are estimated directly by recording for each income unit the net change in each of its assets and liabilities: that is, estimates are made of the volume and direction taken by the funds flowing through every possible channel for personal savings.²

The various types of savings can be classified under three main headings; changes in liquid assets, contractual savings, and other miscellaneous forms of savings. Changes in liquid assets include national savings as a major component. Contractual savings comprise the payments made for life assurance and superannuation together with the repayment of mortgage principal. Miscellaneous savings embrace items such as the purchase of stocks and shares, additions to property, and the repayment of hire purchase and other debt, and also include the business savings of the self-employed—the funds invested in unincorporated enterprises by their owners.

The trend in total savings indicated by the surveys is similar to that in gross income—a small or negligible increase between the 1952 and 1953 surveys followed by a substantial rise between the 1953 and 1954 surveys (Table VII). However, as in the case of gross income, a simple comparison

TABLE VII
Components of Personal Savings

<i>Type of saving</i>	<i>Mean savings per income unit</i>		
	<i>1952</i>	<i>1953</i>	<i>1954</i>
	£	£	£
Change in total national savings	-11	-6	-3
Change in other liquid assets	-7	-9	-8
Change in total liquid assets	-17	-15	-11
Contractual savings	+18	+17	+21
Other savings	+4	0	-2
Total savings ¹	+4	+4	+11

¹ The components of total savings in this table do not add up exactly to the total savings figure given because of rounding off errors and the treatment of the few 'not ascertained' cases. See p. 148 below for a discussion of the same problem in connection with net worth.

between the estimated totals provides only the barest and possibly misleading outlines of the changes which have been occurring, and a much more informative picture is obtained by examining the components of total savings separately.

The surveys show that there was a steady decline over the three years covered in the rate of dissaving in national savings. This is roughly consistent with the published figures of total national savings for the U.K.,³ although official figures indicate that the main reduction in dissaving occurred between 1953 and 1954 and not between 1952 and 1953. Moreover, the official figures

¹ There is one exception to this statement: see below footnote p. 142.

² Changes in holdings of actual notes and coin are excluded for diplomatic reasons, as people are suspicious about questions on this topic.

³ See, for example, the Monthly Digest of Statistics.

suggest that the rate of dissaving at any one time was rather smaller than is estimated by the surveys. However, there are certain differences in coverage between the two sets of figures, which make exact checks or comparisons impossible. Because mean savings per head tends to be a very small figure, it is easy to overlook the great variation which exists between individuals. It is in this sphere that the surveys are particularly useful. For example, although the mean change in national savings has been negative, a large proportion of income units have saved on balance. Indeed, in 1953 and 1954, the positive savers easily outnumbered the negative savers, despite the overall negative

TABLE VIII
Change in Total National Savings¹

<i>Change in total national savings</i>					<i>Percentages of income units</i>		
					1952	1953	1954
Increases	£50 and over				3.0	4.7	4.7
	£20-49				3.3	3.2	5.3
	£1-19... ..				9.4	16.1	16.4
No change					62.1	57.4	53.6
Decreases	£1-19... ..				7.8	5.8	8.2
	£20-49				5.0	4.5	5.4
	£50 and over				7.9	7.1	5.6
Not ascertained					1.5	1.1	0.7
Total					100	100	100
<i>Mean change in national saving (£)</i>					-11	-6	-3

¹ The components of national savings are given in Table XVI.

mean (Table VIII). However, some of the small positive changes may not indicate any active savings, but simply an accumulation of interest in Post Office or Trustee Savings Bank accounts unaccompanied by any new deposits or withdrawals.¹ The reduction in the mean change in national savings from -£11 to -£6 between 1952 and 1953 is reflected in a large increase in the proportion of income units reporting a small positive figure, accompanied by an almost equally great reduction in those reporting no change. Otherwise, the distributions of changes in national savings have been relatively stable, although there can be little doubt that the differences observed, although small, are collectively significant.² The means, however, are liable to be greatly affected by changes in the frequencies in the extreme open-ended intervals of these savings distributions, as the small proportion of the population which is found in these classes may easily account for the greater part of the total volume of positive and negative savings.

Changes in other liquid assets appear to have occurred at a fairly constant rate over the three years and have been an important form of dissaving. It is difficult to make any useful comparison with outside sources since it is impossible to obtain figures of amounts or changes in personal bank accounts. Building societies, however, report an increase in shares and deposits over

¹ Interest on National Savings Certificates is not included either in income or in saving in the surveys.

² A χ^2 test of homogeneity was used: cf. below pp. 164-167.

this period. Nevertheless, the surveys suggest that the reduced rate of dissaving in total liquid assets was primarily due to the reduced rate of dissaving in national savings only (Table VII). The distributions of changes in total liquid assets (Table IX) are basically similar to those of changes in national savings, although the proportion of income units actually reporting

TABLE IX
Changes in Total Liquid Assets¹

Change in total liquid assets					Percentage of income units		
					1952	1953	1954
Increases	£100 and over	...	...	...	2.4	2.6	4.2
	£20—99	...	...	...	6.4	8.5	9.8
	£1—19...	...	...	...	10.9	18.1	18.2
No change					49.5	44.0	40.6
Decreases	£1—19...	...	...	...	9.4	7.4	9.0
	£20—99	...	...	...	12.2	11.3	10.6
	£100 and over	...	...	...	6.4	6.3	5.6
Not ascertained					2.9	2.0	2.0
Total					100	100	100
Mean change in liquid assets (£)					-17	-15	-11

¹ The components of total liquid assets are given in Table XV.

a change is naturally somewhat larger. The shifts in the distributions between the surveys are more obvious than in the case of national savings, particularly between 1953 and 1954 when, for example, the percentage of income units with a positive change of £20 or more increased by 3 points.

The changes in total national savings or in total liquid assets so far considered are the actual changes as recollected by the respondents. In some cases bank books or other documents would be consulted, but by no means in every case. An alternative method of estimating this component of savings would be to measure the changes between the different surveys in the stocks of assets reported by respondents. The requisite means are shown in Table X.

TABLE X
Holdings of Liquid Assets

	1952	1953	1954
<i>Holdings of Total National Savings :</i>			
Mean for all income units (£)	139	124	130
Percentage of income units with some national savings	54.5	52.6	55.3
Mean for income units with some national savings (£)	255	235	232
<i>Holdings of Total Liquid Assets</i>			
Mean for all income units (£)	225	194	252
Percentage of income units with some liquid assets	68.7	66.9	68.9
Mean for income units with some liquid assets (£)	331	290	366

It is immediately clear from this table that a very different picture of changes in liquid assets is obtained from that discussed above. A substantial fall between 1952 and 1953¹ is followed by a considerably greater increase between

¹ About two-thirds of this decline can be attributed to the drop in the estimate of the total volume of ordinary bank deposits of the self-employed. This in turn is partly due to a reduction of nearly a third in the proportion of self-employed in the sample, as well as to a fall in the average bank deposits of the self-employed who were interviewed.

1953 and 1954. This dip in estimated total liquid assets is partly due to the fact that slightly fewer income units actually held some liquid assets in the 1953 Survey than in the other two surveys. The changes in the estimated total of national savings separately are much more consistent with the 'memory' changes previously considered. Indeed, the change between the 1952 and 1954 surveys in the stock of national savings happens to be identical with the sum of the 'memory' changes given by informants in the 1953 and 1954 surveys for the same period.

It is probable that the method of estimating changes in liquid assets by taking the difference in the estimated stocks of these assets at different points of time is, from a purely statistical viewpoint, relatively inefficient in comparison with the 'memory' method, in the sense that the estimates obtained are subject to very much greater sampling errors, other things being equal. However, random sampling errors may not be as important in this context as the other types of error to which the surveys' estimates are subject. For example, it is possible that errors due to lapses of memory on the part of respondents may be more serious for changes than amounts, since the recollected change given may be simply the difference between two amounts estimated in the head of the informant. On the other hand, the motives for concealment are less in the case of changes, and much smaller sums and more recent transactions are generally involved. On balance, allowing for all possible sources of error, the method of estimation based on recollected changes seems to be the more accurate and reliable.

The second main form of savings consists of contractual savings. Almost by definition one would expect considerable stability from year to year in the pattern of contractual savings, apart from any trend elements. According to the surveys, average contractual savings fell slightly between 1952 and 1953 and then rose again rather more sharply between 1953 and 1954. Since outside sources indicate that there has been an upward trend in this form of savings in recent years, the dip between the 1952 and 1954 surveys must be attributed to sampling errors of one kind or another.

The proportion of income units having some form of contractual savings was estimated to be approximately 75 per cent in each of the three surveys (Table XI). This is a remarkably high figure when it is remembered that the proportion having some form of employment income, for example, is only about 5 per cent higher. However, over a third of those with contractual savings saved less than £10 per year in this way, and many of the insurance policies (*e.g.* death benefits) involved very small premia. While the differences between the distributions of contractual savings given by the 1952 and 1953 surveys are not great enough to be regarded as statistically significant, the differences between the 1953 and 1954 surveys are probably too great to be attributed to random sampling errors. For example, the proportion of income units which were reported as having contractual savings of £40 or more increased from 10½ to 14½ per cent between 1953 and 1954. Contractual savings are probably the most reliable of the individual components of savings

TABLE XI
Contractual Savings

<i>Contractual savings</i>						<i>Percentages of income units</i>		
						<i>1952</i>	<i>1953</i>	<i>1954</i>
£1—4	...	...	...	...	...	14.6	15.6	14.6
£5—9	...	...	...	...	...	15.7	14.8	12.9
£10—19	...	...	...	...	...	18.1	18.9	17.0
£20—29	...	...	...	...	...	9.2	10.5	10.2
£30—39	...	...	...	...	...	5.3	5.2	5.5
£40—49	...	...	...	...	...	2.7	3.1	4.8
£50—99	...	...	...	...	...	6.4	4.5	6.4
£100 and over	...	...	...	...	...	2.4	2.8	3.2
No contractual savings	...	...	...	...	...	25.6	24.5	25.3
Not ascertained	...	...	...	...	...	—	0.1	0.2
Total	...	...	...	...	...	100	100	100
Mean contractual savings (£)	...	...	...	...	...	+ 18	+ 17	+ 21

estimated by the surveys, and the distributions shown in Table XI are not inconsistent with each other when allowance is made for trend factors.

The volume of aggregate contractual savings implied by the overall mean of £21 from the 1954 survey was no less than £460 million, since there are about 22 million income units in private dwellings in Great Britain. Alternatively, average contractual savings can be said to be equal to about four and a half per cent of mean gross income. In each of the three years, this considerable volume of contractual savings has been largely or partly offset by substantial dissaving in other forms, principally by running down stocks of liquid assets. It is clear, therefore, that if non-contractual savings were stabilised at around zero a high level of personal savings would be assured, while any positive net figure for non-contractual savings would raise total personal savings to five per cent or more of personal income.

It is impossible to explain the changes which have occurred in the remaining miscellaneous forms of savings subsumed under 'other savings' in Table VII without going into very great detail. However, mention must be made of one component, namely business savings, not only because of its great intrinsic importance but also because of the difficulties of estimation involved. Business savings may be defined as the funds invested in unincorporated businesses by their owners by means of profits retained in and net capital transfers into or out of the business. Unfortunately, many self-employed persons do not have a clear distinction between their personal and their business activities and it is correspondingly difficult to estimate business savings, or at least to disentangle them from the individual's other savings. There can be little doubt that business savings are the least reliable of the surveys' estimates,¹ which is somewhat unfortunate since this is one of the gaps in our knowledge of the personal sector of the economy which can be

¹ This is because retained profits have to be obtained as a residual between a not always reliable profit figure and a not always comprehensive figure of the total withdrawals, including taxation, out of current profits.

closed only by the use of survey methods. Since the motives behind business savings are completely different from those underlying most other types of savings, and since self-employed businessmen comprise one of the wealthier sections of the community, this volatile and elusive component of savings may be responsible for many of the variations observed in the aggregate savings of the personal sector. Moreover, fluctuations in business savings may be accompanied by compensating fluctuations in asset holdings, particularly in personal bank accounts or other liquid assets, due to a transference of funds into or out of businesses. Of course, inverse relationships may exist between other forms of miscellaneous savings, such as the purchase or sale of securities, and changes in liquid assets.

The estimate of 'other savings' obtained from the surveys fell from a positive to a negative figure between 1952 and 1954 (Table VII). This change is directly opposite to the trend observed in the other two types of savings and effectively damps down the increase in savings from these sources. As we have just seen, divergent movements in 'other savings' and changes in liquid assets may quite easily be interrelated and might partly reflect a change in liquidity preference without any change in savings propensities. However, it is likely that the decline in 'other savings' is overstated by the surveys, as there are grounds for believing that business savings were over-estimated in the 1952 Survey.¹ If mean 'other savings' is reduced towards zero in 1952, it becomes doubtful whether a trend can be established with any confidence for 'other savings' in view of the inevitably large margins of error in the estimates of its principal component.

The pattern of savings presented in Table VII has become rather blurred in the process of the qualifications expressed in the text. Because 'other savings' seem to be too high in 1952 and contractual savings are too low in 1953, at least relatively to the estimates obtained from the other two surveys, the absence of any increase in total savings between the 1952 and 1953 surveys is almost certainly misleading. However, estimates obtained by sampling methods of changes in rates of savings between years are inevitably less accurate than the estimates of the rate of saving in any single year. The estimation of national aggregates from sample means is in any case only one of the functions of surveys of this type. The surveys are more useful in enabling the complicated interrelationships between economic variables to be explored at a micro-economic level. In particular they focus attention upon the great variability which lies behind the sample means and their corresponding national aggregates. It is customary to think in terms of distributions when income is the relevant variable, but the idea of savings distributions is much less familiar. And yet, although the period covered by the three surveys has witnessed a substantial increase in aggregate personal savings, the distribution of total savings has proved to be remarkably stable between the surveys (Table XII). Indeed, the changes which have occurred are less noticeable than in the case of the distributions of gross income. Of

¹ For a discussion of this point, see BULLETIN, February 1955, pp. 106, 124, 125.

TABLE XII
Total Savings

Total savings					Percentages of income units		
					1952	1953	1954
Saved :							
£200 and over ...	...	...	...	...	2.2	2.1	2.8
£100—199 ...	...	...	...	...	2.7	3.5	4.9
£50—99 ...	...	...	...	...	6.2	6.9	7.9
£25—49 ...	...	...	...	...	9.6	10.3	10.9
£1—24 ...	...	...	...	...	33.8	34.8	31.2
No saving or dissaving ...	...	...	...	...	13.3	11.1	11.9
Dissaved :							
£1—24 ...	...	...	...	...	12.0	11.7	13.0
£25—49 ...	...	...	...	...	6.6	6.5	5.2
£50—99 ...	...	...	...	...	4.5	4.9	5.6
£100—199 ...	...	...	...	...	3.3	3.0	2.0
£200 and over ...	...	...	...	...	2.6	3.1	2.4
Not ascertained ...	...	...	...	...	3.2	2.1	2.4
Total ...	...	...	...	...	100	100	100
Mean net savings (£) ...	...	...	...	...	+ 4	+ 4	+ 11

course, the surveys may have failed to register with sufficient accuracy all the changes which seem to have been occurring between 1952 and 1953, but it is not even certain whether the differences in the distribution of total savings between 1953 and 1954 are statistically significant.

Distributions of savings, like those of so many other economic variables, are characterised by very long tails. As a result, the means of such distributions are particularly sensitive to changes in the frequencies in the extreme class intervals. For example, if the distributions of savings in 1953 and 1954 are examined closely, it will be seen that the proportion of income units which saved £100 or more increased from 5.6 per cent to 7.7 per cent between 1953 and 1954, while the proportion which *dissaved* £100 or more fell from 6.1 per cent to 4.4 per cent. These changes in themselves might be sufficient to explain the whole of the increase in the mean from £4 to £11.¹ In order to explain a revival in personal savings it may only be necessary to concentrate upon the small minority of the population who are liable to save or dissave very heavily, since these individuals account for the bulk of the aggregate saving and dissaving which is taking place. Statements about the re-emergence of the virtues of thrift or similar sweeping generalisations may quite easily be unfounded since the savings habits of the great majority of the population could be completely unchanged despite a substantial change in aggregate personal savings.

Expenditure on durables

Expenditures on durable goods—household goods, motor-cars and cycles—are frequently closely related to savings. Anticipated expenditures on durables often provide the motive for saving, while the actual expenditures often provide the reason for dissaving. Indeed, expenditure on durables is

¹ This is equivalent to an increase of £150 million in aggregate personal savings.

sometimes included as a component of savings since it constitutes an addition to consumers' capital and helps to stabilise savings patterns.

In the 1952 and 1953 surveys, expenditures on durables were confined to goods costing £25 or more ; in the 1954 survey the limit was lowered to £10, so that the figures obtained from this survey are not comparable with those from the two earlier surveys.¹ The effect of this change in criterion is immediately obvious from the distributions in Table XIII where it can be seen that

TABLE XIII
Net Expenditure on Durable Goods¹

<i>Net durables expenditure</i>	<i>Percentages of income units</i>		
	<i>1952</i>	<i>1953</i>	<i>1954</i>
£1—49	7.9	8.9	22.3
£50—99	8.1	7.0	9.8
£100—199	3.2	4.5	4.3
£200 and over	1.4	2.1	1.7
No durables expenditure	79.4	77.4	61.7
Not ascertained	—	—	0.2
Total	100	100	100
<i>Mean expenditure (£)</i>	<i>18</i>	<i>23</i>	<i>25</i>

¹ In 1952 and 1953, this was confined to goods costing £25 or more, but in 1954 the limit was lowered to £10.

there is a considerable expansion between 1953 and 1954 in the proportion of income units reporting net expenditures of less than £50. If, in order to obtain a better comparison with the two earlier surveys, we eliminate from this lowest interval those income units who spent between £10 and £24 in 1954, the frequency in this interval falls from 22.3 per cent to 10.0 per cent while the frequency with no durables expenditure rises in consequence to 72.0 per cent. The average expenditure for 1954 falls from £25 to £23 as a result of this transference. However, this is bound to be an under-correction for the change in criterion since it is not possible to make any allowance where the total amount spent exceeds £25 but some of the individual items purchased cost between £10 and £24. Thus, although there was a substantial increase in the average amount spent on durables between 1952 and 1953, the surveys do not indicate any further increase between 1953 and 1954 and it is possible that there was in fact a slight decline.

III. NET WORTH

In the 1953 and 1954 surveys an attempt was made to measure consumers' net worth or the amount of wealth owned by private persons. Since the estimates given below are the first of their kind to be published², it is necessary to consider briefly the underlying definitions used and any practical problems

¹ The expenditure figures recorded in the surveys are actually the *net* expenditures, *i.e.* purchases minus sales. Whenever sales exceeded purchases the net expenditure was treated as zero, and the difference was entered as a negative item in the savings account. *Cf.* the Appendix, p. 172 below.

² A more detailed study of net worth will appear in a subsequent issue of the *BULLETIN*.

encountered. An income unit's net worth may simply be defined as the difference between its total assets and total liabilities, although in practice the surveys do not include every type of asset. The form of account which was used to calculate each income unit's net worth can be summarised as follows:

<i>Assets</i>	<i>Liabilities</i>
Liquid assets	Overdrafts
Stocks, shares and other securities	Hire purchase debt
Land, property and unincorporated businesses	Mortgage debt
Motor cars	Other debts
Loans	

The method of valuation used is that of market valuation, *i.e.* the respondent's estimate of the amount of money which could be raised by disposing of the asset on the open market. It will be noticed that there are three important types of asset not included in the above account. The first consists of all durable, household and personal goods—furniture, clothes, cycles, domestic equipment, etc. It would be difficult to obtain a useful figure from informants of the total value of such assets especially since there is no organised (second-hand) market for such goods. The second type of asset omitted from the survey concept of net worth consists of any endowment or other insurance policies held.¹ Again, it would be difficult to obtain a useful figure from respondents because of valuation problems, although an estimate could be made from published statistics of the aggregate value of such policies for the community as a whole. Finally, holdings of actual notes and coin are not included since people would tend to resent questions on this topic.

Average net worth on the survey definition was estimated to be about £800 per income unit in 1953 and £1,100 in 1954. These two figures are not mutually consistent, since the difference between them is clearly much too great for consecutive years. The real change in net worth should be of the same order of magnitude as the rate of savings,² *i.e.* around one per cent of net worth. The 1954 estimate seems to be the more reliable for reasons which will be given presently. Thus, as a rough guide, average net worth can be said to be equal to more than twice average annual gross income, although this ratio is likely to be much less than unity for the great majority of income units, since net worth is much more unevenly distributed than gross income.

Net worth and its components

A rather more detailed net worth account, together with estimates of the average amount per income unit of each of the separate components is given in Table XIV. It should be pointed out that some of the estimates given in this table, and hence the estimates of net worth itself, are unavoidably subject

¹ An exception is made for endowment policies taken out in conjunction with mortgages: see below p. 153.

² The adjustments to the survey definitions of savings and net worth which are required in order to make the change in net worth between two points of time conceptually comparable with the savings during that period are given in the Appendix.

TABLE XIV
Components of Net Worth
*Overall Averages per Income Unit*¹

	Assets		Liabilities	
	1953	1954	1953	1954
	£	£	£	£
Holdings of Total Liquid Assets	...	...		
<i>of which</i> : <i>National Savings</i>	...	194		
<i>Other Liquid Assets</i>	...	124		
Holdings of Stocks, Shares and Other	...	72		
Securities	...	188		
Gross Value of All Property Owned	...	439		
<i>of which</i> : <i>Own House</i>	...	385		
<i>Other Property</i>	...	54		
Value of Car(s) Owned	...	22		
Loans made by Income Units	...	N.A.		
Value of Unincorporated Businesses Owned	...	120		
Overdrafts on Personal Bank Account	...		6	4
Hire Purchase Debt Outstanding	...		6	7
Mortgage Debt Outstanding on All Property	...		76	70
<i>of which</i> : <i>Own House</i>	...		71	66
<i>Other Property</i>	...		5	4
Miscellaneous Personal Debts	...		N.A.	2

¹ Because of a device adopted to simplify the coding and tabulations, certain of these averages may have a very slight downward bias. The mean value of property from both surveys may have a downward bias of £10, and the means for the holding of stocks and shares and car ownership in 1953 may be affected by one or two pounds. None of the other figures in the Table are affected.

to appreciable margins of error. The reliability of the estimates of the individual components will be examined in more detail below. There is, however, a technical problem concerning the relation between the estimates of net worth and its components which must be considered first. Net worth is worked out for each individual income unit at the editing stage of the surveys and tabulated separately from its components. If any single component of net worth is not ascertained, the whole of net worth must become not-ascertained for that income unit even though some of the other components may be known and tabulated, so that the proportion of not-ascertained cases is greater in the tabulations of net worth itself than in the tabulations of any of its components. In practice, therefore, there is no necessity for the sum of the average values of the components to be identical with the average value of net worth obtained directly from tabulations of the latter, and in the 1953 Survey the sum of the components is about £70 greater than the direct estimate of net worth (£803). The average net worth for those income units with a partially ascertained net worth seems to be well above average and the sum of the known components for these cases is often much greater than the average net worth of the ascertained cases. In the 1954 Survey, it was decided to impute any missing components of net worth at the editing stage of the survey wherever feasible, partly to avoid the above anomaly and partly on general grounds, since the supplementary information about the particular income unit can be utilised and all the known components are retained in the net worth tabulations instead of being discarded because others are missing. In any case, some method of imputation must implicitly or explicitly be employed, since to ignore these partially ascertained cases altogether is tantamount to assuming that their average net worth is equal to that of the ascertained cases.¹ The proportion of not-ascertained cases of net worth was reduced from 2.7 to 0.4 per cent between the 1953 and 1954 surveys and the sum of the estimates of the average amounts of the components in the 1954 Survey is only £6 greater than the direct estimate of net worth (£1,105). Moreover, part of this difference may simply be due to rounding off errors.

The methods of imputation used at the editing stage of the 1954 Survey must be briefly described. The amount of total liquid assets or of any individual type of liquid asset imputed was equal to the average holding in the age and gross income group to which the head of the income unit belonged.² Similarly the imputed value of businesses was based on the average value of businesses owned by self-employed heads of income units in the same age and profit group. The value of stocks and shares or any land and property owned was imputed by a different technique since the income received from these assets must be known (otherwise, the schedule is failed altogether) and

¹ Since it is known in the great majority of the not-ascertained cases that the amounts involved cannot be nil, it is generally assumed that their average holding is equal to that of the ascertained cases actually possessing some of the variables in question.

² Actually the averages used were derived from the previous year's survey. Liquid assets were also imputed in this way in the 1953 Survey, but no other component of net worth was imputed at the editing stage of the 1953 Survey. Cf. BULLETIN, February 1955, p. 126.

provides a rather better basis for imputation. In other words, the income stream was capitalized; as a general rule, interest, dividends etc. were multiplied by a factor of about 20, while net annual value or rateable value of property owned was multiplied by a factor of about 100, although any supplementary information available was used at the discretion of the editors. The proportion of cases for which such imputations were carried out is very small and can be estimated roughly from the proportion of not-ascertained cases in the 1953 survey when these methods were not used.¹ There are still a few outstanding cases of not-ascertained net worth in the 1954 Survey where the method of imputation was clearly unsatisfactory or some of the minor items of net worth for which no general method of imputation was adopted were missing.

According to the estimates given in Table XIV about 40 per cent of total assets is in the form of land and property—mainly owner occupied houses. The remaining 60 per cent is more or less equally divided between liquid assets, stocks and shares, and businesses owned. Total liabilities, most of which consists of mortgage debt on owner occupied houses, amount to less than one tenth of total assets. However, most of these assets and liabilities tend to be highly concentrated amongst small sections of the community.

The differences between the surveys in the estimates of average holdings of liquid assets have already been commented upon in connection with savings. Since there seems to be a downward bias in each of the estimates,² the 30 per cent increase between the 1953 and 1954 surveys must be partly a reduction in bias. Very little of this increase in total liquid assets was due to national savings component, and it is believed that much of the increase in the the remaining types of liquid assets can be attributed to the fact that the average amount in personal bank accounts was seriously under-estimated in 1953, apparently because of the poor response from, and under-representation of, the self-employed in that survey.

It is estimated that roughly two-thirds of all income units hold some liquid assets, but about a half of these hold less than £100 (Table XV). A large proportion of these small holdings seem to consist of national savings, since about thirty per cent of income units possess up to £100 in national savings (Table XVI). The great popularity of national savings is clearly illustrated by the fact that well over a half of all income units hold some assets in this form. The substantial increase between the 1953 and 1954 surveys in the average amount of liquid assets held is reflected in a noticeable upward movement in the distribution of holdings. The proportion of income units holding between £1 and £200 worth of liquid assets fell from 47 to 45 per cent, while the proportion holding more than £200 rose from 20 to 24 per cent. Part of this increase was due to national savings, since the proportion of income units holding between £200 and £600 in national savings rose from

¹ In the case of liquid assets the relevant comparison is with the 1952 Survey.

² See the BULLETIN, February 1955, pp. 116–120 for a fuller discussion of this point with particular reference to the 1953 survey.

TABLE XV
Distributions of Total Liquid Assets¹

Total liquid assets	Percentages of income units		
	1952	1953	1954
£1— 49	27.4	26.3	25.8
£50— 99	8.1	9.5	8.6
£100— 199	8.1	11.3	10.6
£200— 399	6.7	8.0	9.7
£400— 599	3.7	4.1	5.1
£600— 999	3.3	3.4	3.8
£1,000—1,999	2.9	2.2	3.3
£2,000 and over	1.8	2.1	2.1
No liquid assets	31.9	33.1	31.1
Not ascertained ²	6.0	—	—
Total	100	100	100
Mean holding of total liquid assets (£)	225	194	252

¹ 'Total Liquid Assets' comprises the following assets:

Post Office Savings Bank Accounts	Building Society Shares and Deposits
Trustee Savings Bank Accounts	Co-operative Society Shares and Deposits
Defence Bonds	Miscellaneous Savings Banks Accounts
National Savings Certificates	Current or Deposit Accounts with Ordinary Banks

² Values were imputed for the not-ascertained cases in the 1953 and 1954 surveys, see p. 148.

TABLE XVI
Distributions of Holdings of Total National Savings¹

Holding of total national savings	Percentages of income units		
	1952	1953	1954
£1— 9	8.8	9.0	8.3
£10— 29	9.0	8.5	9.2
£30— 49	4.6	4.4	4.8
£50— 99	7.2	7.8	8.1
£100—199	7.2	8.7	8.2
£200—399	5.4	6.0	8.5
£400—599	2.9	3.0	4.3
£600 and over	5.3	5.3	4.8
No national savings	45.5	47.3	43.9
Not ascertained ²	4.2	—	—
TOTAL	100	100	100
Mean holding of total national savings (£)	139	124	130

¹ 'Total National Savings' comprises the following assets:

Post Office Savings Bank Accounts
Trustee Savings Bank Accounts
Defence Bonds
Savings Certificates

² Values were imputed for the not-ascertained cases in the 1953 and 1954 surveys: see p. 148.

9 to 13 per cent, although there was a slight fall in the number of income units holding more than £600 worth of national savings.

Since, as we have just seen, about a third of all income units do not own any liquid assets at all while another third own less than £100 worth, liquid assets are much more unevenly distributed amongst the population than

income.¹ The range of amounts held is very great indeed, and a tiny fraction of income units with very large holdings own a substantial proportion of the total volume of liquid assets held by the population. Nevertheless, liquid assets are themselves much more evenly distributed than illiquid financial securities.

The ownership of stocks, shares and other securities is, with the exception of business ownership, easily the most highly concentrated form of asset holding. In the first place, estimates from the 1954 survey indicate that only seven per cent of income units hold financial investments of this kind, while the 1952 and 1953 surveys suggest the proportion may be as low as five per cent. In the second place, the variation in amounts held is very much greater than for liquid assets, since none of the institutional or economic restraints which limit the total holdings of the latter are effective for stocks and shares. For example, the amounts held by income units interviewed in the 1954 survey ranged more or less continuously but with ever decreasing frequency from less than £100 to over £100,000, even though the actual number of cases involved was relatively small. Indeed, the 0.1 per cent of income units with the largest holdings of stocks and shares account for almost a fifth of the total volume of stocks and shares and about 4 per cent of the total net worth for the survey. Because of this tremendous variation in holdings, the estimates of the average amount per income unit must be subject to large sampling errors. Moreover, the valuations given by informants can only be rough and ready in many cases. Even if people take an active interest in their holdings, there are large numbers of securities which are not quoted regularly, if at all, on the stock exchange. This problem is of course most acute in the case of shares in private companies, and several informants frankly admitted that the values they placed on such shares were hypothetical, since the notion of a market value may be completely foreign to such securities.

An attempt was made in the 1954 Survey to estimate the distribution of the total amount of stocks, shares and other securities between British Government securities, shares in public companies, shares in private companies, and other types of securities, e.g. foreign bonds. A substantial proportion of income units could not break down the value of their total holdings in this way, but very tentative estimates based on the remainder suggest that about three-quarters of total investments are divided equally between British Government securities and shares in public companies, most of the other quarter consisting of shares in private companies.

Because so few income units actually own stocks and shares, the distributions of holdings are not worth giving. Nevertheless, it can be stated that the distributions are highly skewed and possibly J shaped, since the most common holding seems to be less than £100. It has already been mentioned that the estimate of the proportion of income units with stocks and shares increased from about 5 per cent to 7 per cent between the two earlier surveys

¹ See BULLETIN, June and July, 1953, pp. 222-226, for a fuller discussion of this point based on the results of the 1952 Survey.

and the 1954 Survey. This increase seems to have been confined to larger holdings since the proportion with more than £500 worth of securities rose from 2.7 to 4.7 per cent between the 1953 and 1954 surveys. The accompanying increase in the estimate of the average amount of stocks and shares per income unit for the survey as a whole seems therefore to be mainly due to fluctuations of sampling, although capital appreciation resulting from the rising security prices on the stock markets may have been a contributory factor.

The most important component of net worth according to the survey estimates consists of land and property, most of it in the form of owner occupied houses. Since just over one-fifth of heads of income units actually own their own houses,¹ property ownership is not nearly so concentrated as the ownership of stocks and shares. Despite the subjective element entering into the property valuations given by many informants and the large sampling errors resulting from the wide variation in the amount of property owned, there is remarkably close agreement between the 1953 and 1954 surveys in respect of property ownership. The overall mean amounts of property per income unit happen to coincide at £439 in the two surveys, although the 1954 survey suggests that a rather smaller proportion of this is due to owner occupied houses. The differences in the distribution of property holdings between the surveys (see Table XVII), do not seem to be large enough to warrant any special comment. The average values of owner occupied houses

TABLE XVII
Distributions of Property Owned

<i>Gross value of property</i>	<i>Percentages of income units</i>			
	<i>Own house</i>		<i>Total property</i>	
	1953	1954	1953	1954
£1— 999	5.2	5.1	5.4	5.9
£1,000—1,999	6.6	7.6	6.5	8.0
£2,000—2,999	5.3	5.8	5.2	5.5
£3,000—3,999	1.4	1.6	1.8	1.8
£4,000—4,999	0.7	0.4	0.9	0.7
£5,000 and over	0.6	0.4	0.8	1.0
None owned	78.8	78.9	77.8	77.0
Not ascertained	1.5	0.1	1.5	0.1
Total	100	100	100	100
<i>Mean value of Property (£)</i>	385	369	439	439

and total property for those income units actually owning such property were about £1,750 and £1,910 respectively according to the 1954 Survey, although the estimates from the 1953 Survey were about £70 greater in both cases. Both surveys agree in estimating that only $3\frac{1}{2}$ per cent of all income units own property worth more than £3,000.

The remaining major type of asset entering into net worth consists of the value of any unincorporated businesses owned. The self-employed were

¹ Nearly one-third of heads of households own their own homes.

actually asked what their business would fetch as a going concern, allowing for money owned to the business and debts or mortgages owed by the business and including the value of any property or premises belonging to the business. It must be emphasised that very many of the answers given could be no more than rough guesses and the results obtained therefore need to be treated with great caution.¹ Nevertheless, there is a somewhat surprising and reassuring consistency between the estimates derived from the two surveys, although this is not apparent from Table XIV. If we confine ourselves to those income units actually owning a business, we find that the average value of their businesses was estimated to be about £2,750 in 1953 and £2,850 in 1954. Thus, the substantial increase in this component of net worth from £120 in 1953 to £218 in 1954 is very largely due to the increase in the proportion of self-employed between the surveys, and not to a violent change in the estimate of the average value of businesses. Since the proportion of businessmen seems to be seriously under-estimated in 1953,² the 1954 estimate of this component of net worth is clearly preferable.

The distribution of business values in the population as a whole seems to be very similar to that of stocks and shares. Only about 6 per cent of income units own this type of asset, and within this 6 per cent the variation in values ranges from about a hundred pounds to many thousands of pounds. The distribution is highly skewed and the mode seems to be around £250. It will be appreciated of course that unincorporated businesses form an extremely heterogeneous collection ranging, for example, from part time vegetable cultivation on allotments to large wholesale businesses or well established professional practices.

The only other physical asset included in the surveys' net worth consists of cars. Cars are owned by about 10 per cent of all income units but their contribution to total net worth is small. The increase in the overall mean value of cars owned from £22 to £27 between the surveys is reflected in an increase in the proportion of income units owning a car or cars worth more than £400 from 1.6 per cent in 1953 to 2.6 per cent in 1954. The final type of asset, namely miscellaneous loans made by income units, is almost negligible and was not tabulated separately in 1953.

If we turn to the liabilities side of the account, the most important item is mortgage debt, most of which is in respect of owner-occupied houses. The results of the surveys compare quite closely, although the changes which have occurred, while small, are opposite to the known trend in the population. However, it is not always easy to work out on the basis of the information given exactly how much principal is still outstanding at the time of the interview, although great care was taken with mortgages at the editing stage of the surveys. When an endowment policy is taken out in conjunction with a mortgage, payments on the policy are treated as if they were repayments of the mortgage principal borrowed, although in practice the latter is repaid in a lump sum when the policy matures.

¹ There are moreover some awkward conceptual difficulties; e.g. on the question of goodwill.

² See below pp. 162, 168-169.

TABLE XVIII
Distributions of Mortgage Debt Outstanding

Amount of mortgage debt outstanding	Percentages of income units			
	On own house		On total property	
	1953	1954	1953	1954
No mortgage debt	} 90.6	89.9	} 90.3	89.2
£1— 99		1.0		1.1
£100— 199		1.4		1.4
£200— 299		1.4		1.5
£300— 399		0.8		1.0
£400— 499		0.5		0.6
£500— 999		2.0		2.2
£1,000—1,999		2.5		2.5
£2,000 and over		0.5		0.5
Not ascertained	0.2	—	0.3	—
Total	100	100	100	100
Mean amount of Mortgage Debt (£)	71	66	76	70

Although the average amount of hire purchase debt per income unit is quite small, this is the most commonly occurring form of debt. The proportion of income units actually with some hire purchase debt rose slightly from 21 per cent to 25 per cent between the 1953 and 1954 surveys; the average amount owed by these income units also increased fractionally from £27 to £28.

The proportion of income units with an overdraft on their personal bank account is very small—around one per cent according to the surveys—although there seems to be a wide range of amounts involved for these few cases. The remaining miscellaneous debts owed by income units are relatively unimportant.

Total net worth

Since the estimates of several of the components of net worth may not be very stable, the estimates of net worth itself must be used with care, since there is no reason to believe that there are compensating errors in the components which tend to offset each other on aggregation. Of the difference of £300 between the estimates of average net worth obtained directly from the tabulations of net worth in the 1953 and 1954 surveys, approximately £70 can be attributed to the different treatment of the partially ascertained cases in the two surveys and a further £100 to the greater proportion of self-employed in the 1954 survey and the consequent increase in the business component of net worth. The remaining £130 is due to the increases in the estimates of stocks and shares and liquid assets. The increase in the latter seems to mark a reduction in bias and may also be partly explained by the increase in the proportion of self-employed. On balance, the 1954 estimate of total net worth is probably much the more reliable.

However, as with incomes and saving, the distributions derived from the surveys may be fairly accurate even though the means of the distributions cannot be estimated with very great precision. Indeed, this is particularly

true of net worth because of its extreme concentration. The distributions of net worth obtained from the 1953 and 1954 surveys are given in Table XIX. Over one-fifth of all income units have no net worth at all,

TABLE XIX
Distributions of Net Worth

<i>Net worth group</i>	<i>Percentages of income units</i>		<i>Percentages of total net worth held by income units with positive net worth¹</i>	
	1953	1954	1953	1954
Negative amount	12.4	12.9	—	—
No net worth	22.2	21.3	—	—
£1— 49	17.2	14.2	0.4	0.3
£50— 99	6.1	5.6	0.5	0.4
£100— 199	7.4	7.8	1.3	1.0
£200— 399	6.8	7.6	2.4	2.0
£400— 599	3.5	4.8	2.2	2.1
£600— 999	4.8	5.2	4.7	3.6
£1,000—1,999	7.1	7.7	12.7	9.9
£2,000—4,999	7.0	7.3	26.8	21.1
£5,000 and over	2.9	5.3	48.9	59.6
Not ascertained	2.7	0.4	—	—
Total	100	100	100	100
Mean net worth (£)	803	1105	—	—

¹ The total amount of negative net worth for those income units with negative net worth is equal to only 0.3 per cent of the total net worth of income units with positive net worth.

while another eighth have a negative net worth *i.e.* are in debt on balance. The former do not possess any of the assets or liabilities listed in the net worth account while many of the latter probably have only a single entry, namely hire purchase debt. Thus, altogether more than a third of income units have no reserves of any kind against unforeseen contingencies, unless they happen to hold insurance policies or large amounts of currency, which seems rather unlikely. Their sole assets probably consist of some furniture or other durable goods.

Although the two surveys agree quite closely in their estimates of the proportions of income units with zero or negative net worth, there has been an appreciable upward shift in the distribution of those income units with a positive net worth. The proportion of income units with between £1 and £99 of net worth has fallen by 3½ percentage points between the 1953 and 1954 surveys, most of this reduction taking place amongst income units with between £1 and £49 of net worth. On the other hand, the proportion of income units with more than £100 of net worth has increased by just over 6 percentage points, this increase being spread over all the higher class intervals but with the greatest expansion in the very highest interval of all, *i.e.* amongst those income units with more than £5,000 of net worth. This increase in frequency in the higher ranges of net worth is of course simply another aspect of the increase in the estimate of average net worth between the surveys.

It is clear from the results of both surveys that the distribution of those

income units with a positive net worth is highly skewed, the range of amounts involved being almost indefinitely great. This is to be expected in view of the distributions of some of the components of net worth considered above. The relative importance of the various components must vary considerably as we move up the net worth scale. For example, the effect of owner occupied houses is likely to be most pronounced in the £1,000 to £5,000 range of net worth: there are estimated to be about fifteen per cent of all income units in this range and it is interesting to see that the estimate of the proportion of income units with owner occupied houses valued at between £1,000 and £5,000 is also about fifteen per cent. There can be little doubt that were it not for the fact that a substantial proportion of income units own their homes, the distribution of net worth would be much more unequal than it actually is. Even so, the distribution of the total volume of net worth owned by the population is highly concentrated, as can be seen from the second part of Table XIX. Thus, according to the 1954 Survey, the top five per cent of income units own nearly sixty per cent of total net worth while the top twenty per cent of income units own about ninety per cent of net worth. Corresponding estimates from the 1953 Survey suggest that the top three per cent of income units own nearly a half of net worth, while the top ten per cent own about three quarters of net worth. At the other extreme we find that well over a half of all income units own less than one per cent of net worth between them. Indeed, as we already have seen, about a third of income units have either no net worth at all or a negative amount.

It might appear from Table XIX that net worth is more concentrated in 1954 than in 1953 since the proportion of total net worth which is owned by income units with more than £5,000 of net worth has increased from nearly fifty to nearly sixty per cent between the two surveys. However, the percentage of income units in this range has increased proportionately much more, so that the share of total net worth *per income unit* in this range actually decreased between 1953 and 1954. It is not possible, for example, to tell from Table XIX whether the share of total net worth owned by the top 2.9 per cent of income units in 1954 is greater or less than the 48.9 per cent owned by the top 2.9 per cent of income units in 1953. Moreover, the surveys' estimates of the share of total net worth held by income units in this highest interval must be very susceptible to fluctuations of sampling since we are dealing with a tiny fraction of the total population with an extremely wide range of holdings. Thus, even if the surveys' estimate of the percentage of income units with more than £5,000 of net worth were accurate within one percentage point, the estimate of the share of total net worth held by income units in this range might well be as much as ten percentage points out.

IV. SAMPLING PROCEDURE, RESPONSE RATES AND SAMPLE STRUCTURES

At several points in the preceding sections it was found necessary to qualify, and sometimes even to modify, some of the results obtained from the surveys. It is clear that the surveys do not always portray accurately the true

state of affairs in the population as a whole, and it is frequently possible in such cases to infer from the pattern of response rates and a comparative study of the sample structures in which direction the error lies. Although the basic demographic background material provided by the surveys is not of very great intrinsic interest, it should not be taken for granted in surveys of this kind since an examination of the demographic structure of the samples is the only method of telling whether or not they are reasonably representative cross sections of the community. Comparisons can be made with data derived from the 1951 Census of Population; but in this article more attention will be paid to the mutual consistency of the three surveys since underlying population changes will in general be so small during so short a period that they can be safely ignored. Apart from the differences in units, definitions and coverage which bedevil any comparisons between the survey and census figures, such comparisons become progressively less useful with the lapse of time, although they can nevertheless show up any major errors. An analysis of the factors associated with response, in so far as these can be determined, is complementary to this sort of study. Indeed, it is logically prior to it and will accordingly be considered first. However, before any of these topics can be profitably discussed it will be necessary to describe an important change in sampling technique which took place between the 1953 and 1954 surveys.

Changes in sampling procedure¹

The methods used in the 1952 and 1953 surveys have already been described in detail in earlier articles.² A two-stage sampling design was used, the first stage units being local authority rating areas which were stratified by region and degree of urbanisation and industrialisation. Within each first stage unit chosen, addresses or 'rateable units' were selected by means of systematic sampling from the rating lists, and the interviewers were instructed to interview all the income units living within each rateable unit provided the latter consisted of a private dwelling. Rateable units were divided into two strata according to whether or not the rateable value of the property exceeded £30, rateable units with the higher rateable value (the 'upper' stratum) being sampled more intensively than the lower. The ratio of the sampling fractions used in the upper and lower strata was 5 : 1 in 1952 and 8 : 1 in 1953.

In the 1954 Survey addresses in England and Wales were selected from the Register of Electors instead of from the rating lists. The first stage units consisted of electoral wards—which are generally much smaller and more homogeneous than local authority rating areas—the wards being stratified by region, degree of urbanization³ and proportion of jurors. The

¹ The sample design for all three surveys was largely planned and executed by the Social Survey, and the field-work was carried out by their interviewers. Mr. J. E. Fothergill of the Social Survey assisted in the design of the questionnaires and the planning of the surveys, and supervised the interviewing and the tabulation of the results.

² See H. F. Lydall, 'The Methods of the Savings Survey,' *BULLETIN*, July–August 1954, and also the *BULLETIN*, February 1955, pp. 123–126.

³ Whereas in the 1952 and 1953 Surveys the first stage units were stratified into urban and rural areas only, in the 1954 Survey they were stratified into conurbations, other urban areas, and rural areas.

significance of the last factor is that jurors as a class are of a higher social and economic status than the rest of the population, since the qualification for jury service is essentially a property one. The names of all persons liable for jury service in England and Wales are marked in the electoral register with the suffix J. The actual qualifications for jury service are that a person must be a registered elector between the ages of 21 and 60 and *either* a householder residing in premises of rateable value of not less than £30 per year in London or Middlesex or £20 elsewhere, *or* the owner, legally or under a trust, of freehold land worth £10 per year or more, or of leasehold land worth £20 per year or more (provided the lease is for at least 21 years or a life interest). Certain persons who are qualified for jury service can claim exemption and have the suffix removed from their names in the electoral register. The most important classes falling into this category are practising lawyers, doctors, dentists, ministers of religion, members of the armed forces, the police, Post Office officials, magistrates and members of either House of Parliament. Strictly, persons over 60 years of age are exempt and not disqualified. Information about jurors was also utilised at the second stage of the sampling since addresses were allocated to one of two strata according to whether or not they contained a person eligible for jury service. For convenience, we shall refer to the stratum containing the jurors as the 'upper stratum'; this stratum was sampled ten times as intensively as the other or lower stratum. All the classes listed above who can claim exemption from jury service will therefore generally be found only in our lower stratum, irrespective of their economic status.

Since the qualifications for jury service are different in Scotland, it was decided to continue to use the rating lists as a sampling frame and method of stratification in 1954 for Scotland only. Thus, in effect, there was no change in sampling procedure for the 10 per cent of income units living in Scotland.

The advantages of the jury qualification as a method of stratification have been discussed elsewhere.¹ The results of the 1954 Survey show, for example, that whereas 17 per cent of the income units in the upper stratum received gross incomes of £1,000 per year or more, only 3½ per cent of the lower stratum had incomes of this level. Again, while 12 per cent of the income units in the upper stratum possessed liquid assets of £1,000 or more, only 4½ per cent of the lower stratum had this amount. There is also a marked contrast between the two strata in respect of the occupation of the head of the income unit: over a third of the upper stratum were self-employed, managerial, technical or professional, compared with a twelfth of the lower stratum. There are, of course, far fewer elderly and retired people in the upper stratum. The difference in economic status between income units in the two strata has probably narrowed slightly on balance as a result of the change in definition of the strata between the two earlier surveys and the 1954 Survey; for instance, the differences between the two strata in the proportions of

¹ T. Corlett, 'A use for the jury qualification in sample design,' *Applied Statistics*, 1952, pp. 34-36.

income units with high incomes or large holdings of liquid assets are a little less pronounced in 1954 than in 1953 and 1952. From this point of view, the change in sampling procedure might not appear to be particularly advantageous, but the electoral register provides a better sampling frame than the rating lists and the method of stratification of the first stage units using the proportion of jurors is more flexible and effective.²

Response rates

The response rate achieved in the 1954 Survey was fractionally higher than in 1953 but still well below the level reached in 1952 (Table XX). The response rate is defined as the proportion of income units in the sample

TABLE XX
Response Rates, Reasons for Failure and Types of Failure¹

<i>Response rates and reasons for failure</i>				<i>Percentages of income units in sample</i>		
				<i>1952</i>	<i>1953</i>	<i>1954</i>
Successes (response rate)	...	...	...	75.1	66.1	67.2
Non-contacts	...	...	...	10.9	11.1	11.3
Direct refusals	...	...	...	12.9	21.9	21.3
Failures at editing stage	...	...	...	1.1	0.9	0.2
Total possible income units	...	...	...	100	100	100
<i>Types of failure</i>				<i>Percentages of failures</i>		
				<i>1952</i>	<i>1953</i>	<i>1954</i>
Rateable unit or address	...	...	...	20.8	18.0	7.1
Household	...	...	...	3.7	2.3	1.6
Income unit	...	...	...	75.5	79.7	91.3
Total failures	...	...	...	100	100	100

¹ The different categories of failures have been described in some detail in an earlier article: *BULLETIN*, February 1955, pp. 90-92. Rateable unit or address failures and household failures occurred whenever the interviewer was unable even to identify any of the income units within a particular rateable unit, address or household. These failures are converted into equivalent numbers of income units for purposes of calculating response rates by assuming that the mean number of income units per rateable unit, address or household is the same for the failures as the successes.

from which successful interviews were obtained on the subject of income. The increase in response of one per cent achieved between the 1953 and 1954 surveys is not statistically significant and there is a strong similarity between the distribution of successes, non-contacts and refusals in the two years. The reason for the higher response in 1952 is to be found in the much smaller proportion of direct refusals in that year, since the proportion of non-contacts has been the same—about 11 per cent of total income units in the sample—in all three surveys.

Although the overall response rates in 1953 and 1954 are almost the same, there are two important respects in which the pattern of response differs in the two years. The first concerns the proportions of the different types of failures. It can be seen from the second part of Table XX that the

² See Corlett, *op. cit.*

proportion of failures at the household and rateable unit or address level¹ fell between 1953 and 1954 from over twenty per cent to less than nine per cent of the total failures in the sample. The reason for this is almost certainly to be found in the change in the sampling frame between the two surveys. In 1954 the interviewers were given the names of all the electors listed at each address, which undoubtedly assisted them in identifying the separate income income units at each address, whereas in 1952 and 1953 they were only given the name of the householder under whose name the property was listed in the rating lists.

The second difference relates to the unweighted response rates. In both the 1952 and 1953 surveys the response obtained in the upper stratum was more than twenty percentage points below that in the lower stratum (Table XXI). However, the response achieved in the upper stratum in the 1954 Survey was only six points below that in the lower stratum and was well above the response obtained in the upper stratum of either the 1952 or 1953 surveys.

TABLE XXI
Response Rates by Stratum

	1952	1953	1954
Lower stratum	77.8	68.9	68.1
Upper stratum	57.5	47.2	62.0
Combined strata : unweighted ¹	68.5	57.3	64.2
Combined strata : weighted	75.1	66.1	67.2

¹ The unweighted response rate (which is obtained by pooling the two strata and ignoring the difference in sampling fractions) needs to be used with caution as it is partly dependent on sampling policy. For example, an increase in the ratio of the sampling fractions in the two strata from 5 : 1 to 8 : 1, such as occurred between 1952 and 1953, will in itself tend to reduce the unweighted response rate, given that response is always worse in the upper stratum than the lower.

Since the upper strata have been sampled much more intensively in these surveys, particularly in the two later surveys, the sudden increase in response in the upper stratum below 1953 and 1954 resulted in many more completed questionnaires being received. In fact, the number of successful schedules increased from 2,104 to 2,463, *i.e.* by over 350, even though the number of inhabited rateable units or addresses originally drawn increased by only 70 from 2,381 to 2,451. Yet, despite this, the weighted response rate rose by a mere one per cent. This paradox is easily explained by the fact that in the true or weighted response rate failures and successes in the lower stratum (in which response actually fell slightly) carry eight and ten times the weight of those in the upper stratum in the 1953 and 1954 surveys respectively.

Apart from the mechanical side of the improvement in the unweighted response rate in the 1954 Survey, it is necessary to consider what significance can be attached to it from the point of view of the quality of the Survey's results. It can be argued that even though the overall weighted response rate

¹ The different types of failure are described in the note to Table XX.

increased by very little between 1953 and 1954, the better response in the upper stratum may lead to more reliable results in 1954 than 1953, especially for some variables such as liquid assets which have highly skewed distributions. However, the change in the definition of the two strata between the 1953 and 1954 surveys makes it impossible to make inferences such as these, even though there are obvious similarities between the method of stratification in the two years.

Since all householders occupying property of rateable value of £30 or more are qualified for jury service, it might appear at first sight that all income units which were in the upper stratum of the 1952 or 1953 surveys would automatically fall into the upper stratum on the 1954 definition. However, this is by no means true, because many of these would be exempt from jury service, in particular large numbers of professional people and all those over sixty years of age. Moreover, it is clear that many income units which would be allocated to the lower stratum in the 1952 and 1953 surveys would come into the upper stratum in the 1954 Survey; namely, those income units living in dwellings of between £20 and £30 rateable value or those living in dwellings of less than £30 rateable value in which some person is qualified for jury service on the basis of property ownership.

The main reason why a poorer response has been obtained in the upper stratum of these surveys is that the typical income unit in this stratum is of a higher economic and social status than in the population at large, and a lower response is generally obtained from this section of the community. Since the difference in status between the strata seems to have narrowed slightly between the 1953 and 1954 Surveys, some narrowing of the gap in response between them might be anticipated. There are, however, two facts which bear directly on this problem. The first is that the proportion of manual and clerical workers in the upper stratum increased from 37 per cent in 1953 to nearly 47 per cent in 1954, while the proportion of retired and unoccupied fell from 22 per cent to just over 11 per cent. The proportions of the other occupational groups were more or less unchanged. Since the response from manual and clerical workers is higher than that from any other categories and the response from the retired and unoccupied is relatively low,¹ some improvement in response in the upper stratum is to be expected. The second fact is that the proportion of single person income units in the upper stratum fell from 41 per cent to 31 per cent; this also can be expected to lead to a big improvement in response, since the response from single person income units is much lower than that from larger income units.²

It is important to know whether or not the response rate varies between sub-groups of the population with different economic or demographic characteristics, since associations between response and particular attributes are liable to affect the representativeness of the results. An extensive analysis of this problem has already been carried out for the 1953 Survey in an earlier article,³ and since the pattern of response in 1954 is very similar to that in

¹ These statements are based on an analysis of the factors associated with response which was carried out for the 1953 Survey. See BULLETIN, February 1955, pp. 92-100.

² See Table XXII. ³ See BULLETIN, February 1955, pp. 92-100.

1953 it is not necessary to repeat such an analysis for the 1954 Survey and the reader is referred to that article for a more comprehensive and more detailed discussion of non-response than will be given here.

The income units in the rateable unit and household failures have to be excluded when the factors associated with response are being examined since by definition the interviewers were unable to find out anything at all about them. Thus any analysis of response has to be based on a modified version of the response rate, which is defined as the percentage of *identified* income units from which successful interviews were obtained (*i.e.* successes as a percentage of successes plus income unit failures). Moreover, the interviewers were not always successful in finding out about specific characteristics of the income unit failures, for example the age of the head of the income unit, so that even some income unit failures have to be excluded in particular analyses. For these reasons, the breakdown of the response rate according to the various demographic variables shown in Table XXII tends to give a somewhat exaggerated impression of the response achieved within each of the separate classifications. However, it is the relative rather than the absolute levels of response which are of most significance in this table, and even if all the failures could always have been included, the response rates would not be decreased by more than one or perhaps two percentage points, except in the case of the age analysis in which the proportion of income unit failures for which the age of the head was not ascertained was relatively high.

Two of the factors which were found from the 1953 Survey to exert a considerable influence on response are the occupation of the head of the income unit and the rateable value of the address or rateable unit. Neither of these pieces of information is available for the failures in the 1954 Survey: no question was asked about occupation because of a rearrangement in the questionnaire between the surveys designed to facilitate the interviews with the co-operative respondents; while rateable value was known in 1953 and 1952 only because the samples were actually drawn from the rating lists. However, it can be inferred from the difference in response between the two strata that there must have been some negative correlation between response and rateable value in the 1954 Survey also. On the other hand, one of the striking features of the occupational response rates in 1953, namely the very poor response obtained from the self-employed, does not seem to have been repeated in 1954, since the proportion of successful income units with self-employed heads increased by over a half, from 4.4 to 7.0 per cent of the income units in the sample. Indeed, it is even possible that a comparatively good response was obtained from the self-employed, since the 1954 Survey's estimate of the proportion of income units with self-employed heads is actually greater than the corresponding estimate derived from the 1951 Census of Population.

Apart from occupation and rateable value, it was found in the 1953 Survey that the most important factor influencing response was the size of the income unit, *e.g.* whether or not the income unit consisted of a single person, a

TABLE XXII

Response Rates and Reasons for Failure for Identified Income Units: 1954 Survey

	Percentages of identified income units which were:				
	Successes (response rates)	Non- contacts	Direct refusals	Editing failures	Total
Region					
Scotland	72.1	9.5	18.3	0.1	100
North of England	72.4	8.8	18.8	—	100
Midlands and Wales	73.7	8.0	18.1	0.3	100
South and East England	64.1	12.2	23.5	0.3	100
Size of Town					
Conurbations	66.3	11.8	21.9	0.1	100
Other urban	68.5	9.0	22.4	0.2	100
Rural... ..	77.3	8.7	13.6	0.4	100
Age of Head of Income Unit					
18—24	74.5	13.5	12.0	0.1	100
25—34	80.1	7.5	12.3	0.1	100
35—44	83.5	2.2	13.8	0.5	100
45—54	85.6	3.1	10.9	0.5	100
55—64	76.8	4.9	18.3	0.1	100
65 and over	74.5	9.6	16.0	—	100
Sex of Head of Income Unit					
Male	71.6	8.6	19.6	0.1	100
Female	63.1	13.7	22.9	0.3	100
Number of Persons in Income Unit					
One	61.9	16.4	21.6	0.2	100
Two	66.0	6.9	27.1	0.1	100
Three... ..	84.9	1.9	13.1	0.1	100
Four and over	87.6	3.1	8.9	0.5	100
Number of Children in Income Unit					
None	63.2	12.9	23.8	0.1	100
One	84.5	1.4	14.1	—	100
Two	84.2	4.3	10.6	0.9	100
Three and over	92.1	2.4	5.4	0.1	100
Type of Income Unit					
Primary	72.7	6.9	20.2	0.2	100
Secondary	60.5	18.0	21.5	—	100
All Identified Income Units ...	69.2	10.1	20.6	0.2	100

married couple without children or a married couple with children. The importance of this factor is readily apparent from Table XXII. Other factors associated with response are region and density of population, and the sex and age of the head of the income unit. Not all of these factors necessarily influence response since some of the associations may be generated indirectly through the influence of other factors correlated with the factor in question. The most important change in the pattern of response between the 1953 and 1954 surveys has been a striking increase in response in the 45-54 age group: response is highest in this age group in the 1954 Survey although one would expect response to be highest in the two age groups below, in which the influence of dependent children on response should be greatest.

Comparisons between sample structures

Distributions of the principal demographic variables from the three surveys are shown in Table XXIII together with corresponding estimates

derived from the 1951 Census of Population.¹ It is difficult to convert the Census figures on to an income unit basis and to adapt them to the survey definitions and classifications, and there are differences in coverage between the Census and the surveys because of the exclusion of the institutional population from the latter. Thus, it should not always be assumed whenever the surveys disagree with the Census that there is some bias in the surveys' results, since small discrepancies may be due to the technical difficulties of reconciliation or to the increasing time lag between the Census and the surveys.

Problems of this kind should not arise between the surveys, although in practice it is difficult to ensure that classification and coding criteria are rigidly consistent from year to year. Underlying changes in the structure of the population can be safely ignored, at least between consecutive years, and the differences in the demographic structures of the samples have generally to be attributed to deficiencies in one or other of the surveys. Apart from considering the actual way in which the samples differ, it is important to know whether or not the differences are greater than can be reasonably expected on the assumption that these are random samples from the same population. However, it is not easy to carry out exact tests of significance because of the fairly complicated sampling procedure which has been used in the surveys.

The normal method of testing the significance of the differences between percentage distributions drawn from two or more samples is to calculate the appropriate version² of the statistic χ^2 . Reference to the usual statistical tables of the χ^2 integral will determine the probability of obtaining a value of χ^2 as great or greater than that actually obtained, on the assumption that the samples are simple random samples from the same population. However, some allowance must be made in the case of the surveys for the fact that the percentage distributions derived from them are not based on simple random samples.

When comparing two or more empirical frequency distributions, the calculated value of χ^2 depends on two factors: first, the differences in the percentage distributions; and second, the numbers in the samples.³ If the percentage distributions from simple samples are held constant and the sizes of the samples increased or decreased by a certain proportion, the value of χ^2 will increase or decrease by exactly the same proportion, since the relation between χ^2 and the sample sizes is a simple linear one, *cet. par.* In other words, for any given percentage distributions, the larger the samples on which they are based, the smaller the probability that the differences between them are due to chance, since by increasing χ^2 in the manner just described, this probability is reduced.

It is clear that the sampling procedure used in the surveys reduces the

¹ *Census 1951, Great Britain, One Per Cent Sample Tables*. General Register Office.

² See, for example, H. Cramér, *Mathematical Methods of Statistics*, Princeton: Princeton University Press, 1946, pp. 441-449.

³ Cf. formula (30.5.1) *op. cit.*, p. 443.

TABLE XXIII
Distributions of Demographic Characteristics

	Percentages of income units			
	1951 Census	1952 Survey	1953 Survey	1954 Survey
Region				
Scotland	10.6	10.8	10.5	10.5
North of England	27.2	25.8	26.4	27.8
Midlands and Wales	20.5	22.6	24.2	23.1
South and East England	41.7	40.8	38.9	38.5
Size of Town				
Conurbations	38.6	35.2	36.0	40.0
Other urban	41.7	46.2	44.9	39.6
Rural... ..	19.7	18.6	19.1	20.5
Age of Head of Income Unit				
18—24	14.1	12.4	10.7	11.7
25—34	17.7	18.2	18.0	16.2
35—44	18.6	18.6	20.3	17.5
45—54	17.3	18.8	17.9	22.1
55—64	14.3	14.5	13.2	12.8
65 and over	18.0	17.5	19.9	19.7
Sex of Head of Income Unit				
Male	70.2	75.4	73.8	73.8
Female	29.8	24.6	26.2	26.2
Occupation of Head of Income Unit				
Farmers	1.5	1.1	0.5	} 7.0
Other self-employed	4.8	5.2	3.9	
Managers and technical	8.5	6.2	7.3	9.6
Clerical	} 10.6	} 12.0	8.3	7.0
Sales			5.6	3.8
Skilled manual	} 50.4	} 36.2	34.7	38.4
Unskilled manual			17.1	13.3
Retired and unoccupied	24.2	21.6	22.8	20.9
Occupation not ascertained	—	0.6	—	—
Industry of Head of Income Unit¹				
Agriculture	5.6	5.4	4.0	4.8
Mining and quarrying	4.6	5.5	5.1	3.2
Manufacturing : metal	19.1	16.1	18.5	21.5
Manufacturing : other	18.5	18.4	19.2	21.1
Building and contracting	7.1	8.3	7.6	6.8
Gas, water and electricity	2.0	2.1	1.3	1.7
Transport and communications	8.9	10.9	9.6	9.1
Distribution	11.5	10.8	11.5	11.9
Professional and other services	16.6	14.1	15.0	14.4
Public administration and defence	6.2	6.4	7.5	5.0
Industry not ascertained	—	2.0	0.7	0.7
Number of Persons in Income Unit				
One	N.A.	37.1	36.2	39.7
Two	N.A.	27.5	27.0	26.1
Three... ..	N.A.	16.6	15.7	16.4
Four	N.A.	11.6	12.6	9.5
Five	N.A.	4.6	5.2	5.1
Six and over	N.A.	2.6	3.3	3.2
Housing Status				
Owens outright	N.A.	12.4	11.1	11.6
Owens with mortgage	N.A.	9.5	10.0	10.9
Rents council house	N.A.	15.0	14.3	13.6
Rents other unfurnished accommodation	N.A.	32.3	37.1	34.0
Rents furnished accommodation	N.A.	2.3	1.4	2.1
Rent free	N.A.	2.6	3.4	2.4
Secondary income unit	N.A.	25.9	22.7	25.3

¹ Excluding retired and unoccupied.

efficiency of estimation of the distributions of basic demographic variables in comparison with simple random samples with the same numbers of income units in them.¹ Thus, differences which would be significant between distributions based on simple samples of the same size as the surveys, might not be significant in the case of the surveys since the latter are in this respect equivalent to simple samples of a smaller size.

Let us now see what can be inferred if the actual numbers of income units in the surveys are used in calculating χ^2 as if the savings surveys were actually simple samples. If the value of χ^2 obtained is less than the tabulated value of χ^2 for the same number of degrees of freedom at the 5 per cent level of significance, we can be sure that the differences between the distributions are not significant, since any correction for the sampling procedure used in the surveys will be to substitute smaller effective sampling sizes in calculating χ^2 . This is bound to reduce χ^2 , and hence the significance of the differences, still further. If the calculated value of χ^2 exceeds the 5 per cent value of χ^2 , it is necessary to consider whether the reduction from the actual sample sizes used in calculating χ^2 to the estimated sizes of simple samples of equivalent efficiency, will reduce χ^2 sufficiently to bring it below the 5 per cent value of χ^2 . Alternatively, we can ask to what proportion of the existing sample sizes would the actual sample sizes have to be reduced before the differences in the percentage distributions could be tolerated at the 5 per cent level of significance in simple samples of the same size. This must be equal to the ratio of the calculated value of χ^2 to the tabulated 5 per cent value of χ^2 , since χ^2 varies in the same proportion as the sample sizes for simple samples, and the calculated values of χ^2 are obtained on the assumption that the samples are in fact simple samples. This ratio is easily calculated and can be expressed conveniently in index-number form. The only remaining problem is whether or not this required reduction in sample sizes is greater than the maximum possible loss in efficiency, *i.e.* than the estimated reduction from actual sample sizes to equivalent simple sample sizes.² For the kind of demographic distributions given in Table XXIII, it is thought to be improbable that the equivalent simple sample sizes can be less than 80 per cent of the actual sample sizes.

A series of such index-numbers based on comparisons between the distributions shown in Table XXIII is given in Table XXIV. Any figure of less than 80 indicates significant differences for reasons just given. A figure greater than 100 simply means that the 5 per cent value of χ^2 is already that much greater than the calculated value of χ^2 , so that the differences are clearly not significant. Finally, there is a range of indeterminacy between 80 and 100 which is the penalty for not using simple samples.

¹ This loss in efficiency is mainly due to the selection of income units in 'clusters' (because of taking all the income units in each address) and the heavy oversampling in the upper relatively to the lower stratum. However, the loss of efficiency in this sphere is compensated by gains in other respects.

² The loss in efficiency can be estimated roughly by comparing the actual sampling errors for various statistics calculated from the surveys with the corresponding sampling errors of simple samples of the same size. The loss in efficiency may vary between different demographic and economic variables. Cf. BULLETIN, July-August 1954, pp. 239-243.

TABLE XXIV

*Tests of Homogeneity between Distributions from Separate Surveys¹**Percentage ratios of values of χ^2 at the 5 per cent level of significance to the calculated values of χ^2 using actual sample sizes*

Type of distributions compared	Surveys to which the comparisons relate		
	1952-1954	1953-1954	All three surveys simultaneously
Region (4) ²	100	557	233
Size of town (3)	26	44	39
Age of head of income unit (6)	61	51	59
Sex of head of income unit (2)	225	∞	273
Occupation of head of income unit (6)	33	25	30
Industry of head of income unit (11)	33	40	41
Number of persons in income unit (6)	101	76	94
Housing status (7)	191	81	74

¹ In this table, the lower the figure the worse the comparison between the distributions. A figure of 100 or more indicates that the differences in the distributions compared are not significant at the 5 per cent level, while any figure of less than about 80 can be taken indicate that the differences are significant. If the figure lies between 80 and 100 the question of significance cannot properly be decided.

Where the figure is less than 100, it shows the approximate size of the samples (expressed as a percentage of the existing sample sizes) to which the actual sample sizes would have to be reduced before the observed differences in the percentage distributions could be tolerated in simple samples at a 5 per cent level of significance. The way in which the figures in this table were calculated, together with a fuller discussion of their meaning, is given in the text.

² The bracketed figures give the number of class intervals in the distributions.

Although this particular method of analysis is designed to systematise the comparisons and tests of significance, it will be appreciated that because of the practical difficulty of estimating the equivalent simple sample size for each of the demographic (or economic) variables, the tests just proposed cannot be very exact. However, in principle the tests could be considerably refined after a more intensive investigation of sampling errors and efficiency. The results of tests based on comparisons between distributions from the 1954 Survey and each of the other two surveys, and also between all three surveys simultaneously, are given in Table XXIV. The 1952 and 1953 surveys have already been compared in an earlier article.¹ In practice, the question of significance and non-significance appears to be seldom in doubt since only three out of the twenty-four index numbers lie between 80 and 100. It is immediately obvious from this table that the most homogeneous sets of distributions are those for income units by region, sex of head, number of persons in the income unit, and housing status. The least homogeneous are those based on size of town, and the occupation and industry of the head of the income unit. It is also interesting to see that for several variables, much closer comparisons are obtained between the 1952 and 1954 surveys than between the 1953 and 1954 surveys. However, the disconcerting feature of the table is the number of significant differences which have been obtained between these basic demographic distributions, and it is necessary to consider the comparative sample structures in more detail.

¹ See BULLETIN, February 1955, pp. 107-109.

The regional distributions of income units have not changed significantly between the surveys although there has been a noticeable decline from 1952 to 1954 in the surveys' estimates of the proportion of income units in the south of England, with a corresponding increase in the north of England. The proportions given by the 1953 and 1954 surveys for the south of England are very probably underestimates because of the low response in that area. The distributions according to density of population or size of town, on the other hand, have changed so markedly between the first two surveys and the 1954 Survey that no statistical test is needed. The drop of over five percentage points between 1953 and 1954 in the proportion of income units estimated to be living in 'other urban' areas is the greatest single change recorded in any of the demographic distributions derived from the surveys. There has been a corresponding jump in the proportion reported to be living in conurbations together with a smaller increase for rural areas. The main explanation for this swing seems to be that there has been some change in the method of classifying districts as belonging to conurbations or other urban areas, which was associated with the change in the sampling frame between the two earlier surveys and the 1954 Survey. However, comparisons with corresponding estimates derived from the 1951 Census of Population suggest that whereas in 1952 and 1953 the survey proportions for conurbations and other urban areas were too low and too high respectively, the converse was true in the 1954 Survey. Thus the errors are by no means all on one side, and the changes between the 1953 and 1954 surveys, while in the right direction, have simply overshoot the mark by as much as the previous estimates fell short, so that we find abnormally large discrepancies when the surveys are put side by side.

There have also been significant changes in the age distributions between the two earlier surveys and the 1954 Survey, the most striking difference being the increase between 1953 and 1954 in the proportion of income units whose heads were aged between 45 and 54 years. As we have already seen, the response rate in this age group was higher than in any other in the 1954 survey, having increased by about 10 percentage points between 1953 and 1954. In the 1952 and 1953 surveys, the principal defect of the age distributions was a shortage of income units in the lowest age group, because of a large proportion of non-contacts. While this is still present in the 1954 Survey, the surplus in the 45-54 age group is perhaps even more serious, and the distribution appears generally less satisfactory than in the two earlier years.

There has been no change whatsoever in the surveys' estimates of the sex ratio for heads of income units between 1953 and 1954 and the agreement between all three surveys is very good in this respect.

The distributions of income units according to the occupation of their heads do not compare well between the surveys. Since nothing is known about the response rates in the different occupations in the 1952 and 1954 surveys it is difficult to know exactly what is the principal reason for the changes. The most important feature of the comparative occupational

distributions is the low percentage of self-employed in the 1953 survey, which was at least partly due to the very low response obtained from this category in that year. A large part of the downward biases in the 1953 survey's estimates of income, assets and savings could be traced directly to this cause.¹ While downward biases are also clearly present in the 1952 and 1954 surveys, they are relatively less important than in the intervening survey, which makes comparisons between the surveys that much more complicated. In the 1954 Survey it is even possible that we have proportionately too many income units both in the self-employed category and in the managerial, technical and professional group. Part of the substantial increase in the latter group between 1953 and 1954 may of course be due to a somewhat more generous classification of certain grades in the 1954 survey and may not reflect genuine changes in the structure of the samples.

Other changes in the occupational distributions, although quantitatively even greater, are much less important in their repercussions on the surveys' findings. In particular, the big gain in skilled manual workers at the expense of unskilled manual workers between 1953 and 1954, which in a purely statistical sense is highly significant, also looks very much like a change in coding criteria between the surveys. The proportion of manual workers, who as a group are easily identified, is exactly the same in both surveys, while there are very many borderline jobs which are very difficult to classify as skilled or unskilled, especially if they are inadequately described.

The distribution by industry of those income units whose heads are actually working has also changed very considerably between the surveys. This has taken the form of a large expansion in the proportion of income units estimated to be working in manufacturing industry, particularly in the metal, engineering and allied trades. While there has undoubtedly been an actual change in the industrial distribution of the working population of exactly this kind, there can be little doubt that the surveys over-estimate the extent of this movement, especially that into the metal working industries.

The size distribution of income units seems to have changed significantly between the 1953 and 1954 surveys, the proportion of single person income units increasing by $3\frac{1}{2}$ percentage points. This change probably represents an improvement since the very low response rate from single persons is likely to lead to their under-representation in the surveys. There was also an almost equally large drop in the proportion of four person income units, but there is no apparent reason either for this change or for that in the proportion of single persons. We obtain a better general comparison between the 1952 and 1954 surveys and it is likely that, taking the three surveys together, the differences in the size distributions are not statistically significant.

In the case of housing status, it is also found that the distribution from the 1954 Survey compares much more closely with that from the 1952 Survey than with that from the 1953 Survey. The increase in the percentage of single person income units between 1953 and 1954 is reflected in the dis-

¹ Cf. the previous article in the BULLETIN, February 1955.

tributions of housing status by a similar increase in the proportion of secondary income units, although the response from secondaries did not improve relatively to that from primary income units. There has been an appreciable drop in the proportion of income units renting unfurnished accommodation other than council houses between 1953 and 1954, but this appears to be due to the fact that the 1953 estimate was too high.

Conclusion

None of the three surveys so far taken can be said to have yielded perfectly representative samples of the population, mainly because of the low response which is obtained from certain sections of the community. There is a *prima facie* case for preferring the results of the 1952 Survey whenever these clash with those derived from the two later surveys, since the response rate in the first year was appreciably higher than in 1953 and 1954. On the other hand, the accumulation of experience and the subsequent improvements and refinements in technique are reasons for preferring the results of the 1954 Survey, especially when dealing with some of the more intricate economic phenomena. Although the age distribution from the 1954 Survey does not appear to be particularly good, there are no grounds for believing that in general the demographic structure of this sample is any more or less suspect than those of the 1952 and 1953 surveys. Moreover, the indications are that the coverage of the wealthier sections of the community is as good in the 1954 Survey as in the 1952 Survey. Indeed, in 1954 a greater proportion of the successful interviews took place with the self-employed, managerial and professional classes than in either 1952 or 1953.

An analysis of response rates and basic demographic distributions in itself is not sufficient to enable a proper appraisal to be made of the reliability of the surveys' principal findings. The surveys are primarily explorations in the economic field and the mass of demographic information which is collected is only intended to assist in the interpretation of the economic data. Since many of the economic variables with which we are dealing are highly concentrated a most important prerequisite as far as the quality and reliability of the surveys' main results are concerned is that sufficient information should be collected about the small and wealthy minorities of the population and that they should be adequately represented in the sample. It is for this reason that the upper stratum in each of the surveys has been sampled so much more intensively than the lower stratum. This should not be taken to mean that the general representativeness of the sample is not important, but that certain deficiencies in the demographic structure of the sample may be much more important than others. For example, if the percentage of clerical workers in the sample were, say, four instead of six, the effect might not be serious; whereas, if the percentage of self-employed were down by a similar amount the repercussions on some of the survey's estimates could be very substantial. It is because something of this kind is believed to have happened in the 1953 Survey that some of the

results of this survey are inferior to those from either the 1952 and 1954 surveys, even though from a purely demographic viewpoint the 1953 Survey may not be any worse. Finally, it should be remembered that the points just discussed are most relevant when attempting to estimate national aggregates by 'blowing-up' the sample means, and that the surveys are generally a fairly reliable source for distributions or inter-relationships between economic variables.

APPENDIX

SAVINGS AND CHANGES IN NET WORTH

Although savings can be defined as the change in net worth from the beginning to the end of the year, this relationship does not in fact hold good using the survey definitions of savings¹ and net worth.² The adjustments which need to be made to an income unit's savings or to the changes in its net worth in order to make them conceptually comparable are listed below. On the basis of the survey definitions :

the change in net worth=

savings :	<i>plus</i>	<i>minus</i>
	Capital gains on securities and property	Capital losses on securities and property
	Gifts and other capital transfers received	Donations and other capital transfers made
	Value of car(s) owned at end of year	Value of car(s) owned at beginning of year
	Receipts from any excess of sales over purchases of durables and cars	Payments on life assurance
		Superannuation contributions
		Amount paid for any annuities purchased.

The first major adjustment required is for capital transfers and for capital gains or losses incurred during the period covered. The actual receipt of a capital transfer is entered in the savings account as an item of dissaving, so that if the capital is invested and not spent, this item will be exactly offset by a positive item in the form of an increase in assets. In this way, the income unit's overall net saving is unaffected by the transfer even though its net worth is clearly increased. If the capital is simply spent on consumption, the income unit is genuinely dissaving in the sense that its consumption exceeds its income, despite the fact that its net worth is unchanged over the period. Capital gains or losses are tacitly treated in the savings account like capital transfers. Unrealised capital gains can be regarded as capital transfers which are automatically invested in the asset in the form of which they were received, so that they can be ignored in calculating savings, although they must increase net worth since all securities and property are valued at current market prices. Realised capital gains lead to dissaving by the income unit unless they are invested in some other form of asset. If they are invested, savings are

¹ See pp. 173-177 in the article by L. R. Klein in this issue.

² See pp. 145, 146 above and also Table XIV.

unaffected by the capital gain, while net worth increases; if they are spent, the income unit is dissaving, while net worth is unaffected. Similar reasoning applies *mutatis mutandis* to capital losses or capital transfers made by an income unit.

The second major adjustment concerns part of contractual savings. Endowment and other insurance policies and pension funds are not included in net worth, even though payments on such policies and superannuation contributions comprise a major part of savings. The latter must therefore either be deducted from savings or added to the change in net worth, as part of the reconciliation.

A third adjustment relates to the ownership of cars, since cars are included in net worth although the amounts spent on them are not included in savings. A correction is also needed for annuities. These are not included in net worth although the purchase of an annuity is treated as a form of savings.

Finally, an adjustment is required whenever the amount received from the sale of durable goods and cars exceeds the amount spent on them. The expenditures on durables recorded in the surveys are *net* expenditures (*i.e.* purchases minus sales) and are treated as zero if sales exceed purchases. The difference is entered as a negative item in the savings account, the surplus funds being akin to a capital transfer. However, net worth is not affected by changes in the stock of durables (except for cars, for which special allowance is made) even though savings can be affected in the way just described.

This completes the reconciliation at an income unit level. If we aggregate over the population covered by the survey, capital transfers between income units—gifts, loans, etc.—can be ignored, since these will cancel each other out.¹ Other capital transfers, *e.g.* the receipt of a post-war credit, will not of course cancel out.

¹ One exception, if it can be regarded as such, is that capital received from legacies will not cancel out, since only the recipients can be included in the surveys.

PATTERNS OF SAVINGS

THE SURVEYS OF 1953 AND 1954

By L. R. KLEIN

The Savings Surveys attempt to give a reasonably complete picture, in financial accounting terms, of individual consumers throughout the nation. A major objective is to estimate the flow of saving. This is not easy because there is considerable disagreement among experts, not to mention consumers, as to what constitutes *saving*, and the items required under any reasonable definition are not easily measured.

CONCEPTS

In a general sense, saving during any period of time is measured as the net change in wealth from the beginning to the end of that time period. If we have in mind a comprehensive concept of saving, we must measure the net change in all forms of wealth held by consumers. The broadest concept covers all forms of wealth—financial, physical and psychic. Psychic wealth is ill defined and nearly impossible to measure. This and other factors impose pragmatic or operational limits on the Survey concept of saving which, however, covers nearly all financial and some physical forms.

Saving, as we shall use the term in the statistical tabulations of this article, includes the following :

1. Net increase in liquid assets, consisting of : (a) Net change in National Savings. (b) Net change in other liquid assets—deposits in savings banks other than National Savings, shares or deposits in building societies, shares or deposits in co-operative societies, accounts in ordinary banks.

2. Payments for life assurance and superannuation.

3. Net decrease in indebtedness, consisting of : (a) Repayment of mortgage principal—contraction of new debt being counted as negative repayment. (b) Net repayment of other consumer debt—contraction of new debt being counted as negative repayment. This item includes hire-purchase debt, borrowing from persons, and borrowing from lending institutions.

4. Net loans to individuals.

5. Net purchases of securities other than National Savings—i.e. stocks, shares and bonds.

6. Net purchases of, or additions to, real property, either for occupancy or for rental income.

7. A *negative* item consisting of gifts and other lump sums received.

8. Business saving—retained earnings plus personal funds put into business less receipts from sale of business assets.

Ideally, we might think of constructing complete balance sheets, for each individual, at the beginning and end of the accounting period. From these we could, in principle, calculate the net change in all assets and liabilities as a measure of saving. The items outlined above are covered in one form or

another in the questionnaire of the Savings Survey which was designed to lead us as directly as possible to the desired measure of saving although, at particular points, we depart from strict calculations of asset-liability changes and therefore have to introduce special-substitutes in the interview.

In estimating the net change in liquid assets, we do not include the net change in currency holdings, which would be difficult to ascertain in a personal interview survey. For the most part, we do not attach much significance to this omission, but under circumstances in which changes in currency holdings are an important dynamic component of personal saving we would probably do better to try to estimate it from aggregative statistics. Some liquid assets earn interest, and in computing the net annual change in balances we try to reckon the interest accrual.¹

Life assurance is an extremely popular asset in this country, being held by about 70 per cent of all income units, and while many insured persons may not look upon their regular premium payments as a form of saving, they are in fact accumulating financial reserves. Each policyholder's share in the net change in reserve position of the companies is a correct measure of his individual saving. Since this is a complicated figure, varying with the type of policy and with the investment income of the company, it can hardly be expected that our respondents could properly allocate their premium contribution between expenditure for protection and saving. We simply record the total premium payment as a contribution towards individual saving. Analogous problems arise in connection with payments for superannuation; here we also enter the total amount paid, by the employee alone, as an item of positive saving. An inconsistency in Survey accounting practice should be noted in this respect. Payments for superannuation are regarded as saving, but annuity benefits from such schemes are not regarded as negative saving; they are treated as income receipts.² This is contrary to usual practices in social accounting. It should also be noted that in social accounting the nationwide aggregates of payments for life assurance and superannuation can be split into expenditure and saving.

Increases in assets are positive savings, and decreases in assets are negative savings. Correspondingly, decreases in liabilities are positive and increases in liabilities negative savings. Among types of liabilities, mortgage indebtedness on residential property occurs frequently. Survey respondents usually know accurately the amount of their periodic payment, but they cannot always separate the parts associated with interest cost and principal repayment. We attempt, in editing the completed interview forms, to classify mortgages into types and use actuarial principles for estimating the net contribution to saving in mortgage payment. In the savings calculation, to counterbalance the positive flow realized through mortgage repayment, we have the negative flow in the form of contraction of new mortgage debt.

¹ Interest accrued is not calculated for Saving Certificates.

² That part of the annuity benefit representing the drawing down of capital should be treated as negative saving.

The repayment of non-mortgage debt by consumers occupies a position in the total savings concept parallel to the repayment of mortgage debt. Other consumer debts are due to hire purchase, loans from individuals, or from lending institutions. While we try to be comprehensive in questioning respondents we may fail to elicit information on all possible types of debts and may miss short run accounts with tradesmen, bills owed for legal fees, and, in some cases, for medical expenses. No attempt is made to segregate principal repayment from interest in our treatment of instalment debt.

We have listed these liability items just after life assurance and superannuation payment in our outline because together they form an interesting component of total saving—*contractual saving*. In actual practice we calculate contractual saving as the sum of payments for life assurance, superannuation and retirement of mortgage debt. These are all payments on long term contracts, but for some purposes it may be useful to broaden our concept by including the repayment of non-mortgage debt, which is a savings item with some involuntary characteristics, even though it usually involves an obligation for a shorter time period than is the case with contractual saving. Initial decisions, i.e., agreeing to a life assurance or superannuation contract or negotiating a new mortgage are not of the contractual form, but in practice we lump them together with payments on existing contracts in computing contractual saving.

Saving in the form of security holdings concerns only a small part of the population. Individual saving is measured as the difference between the amount spent on purchases and the amount realized from sales. Unrealized capital gains or losses are not included. Realized capital gains or losses are implicitly offset against increases or decreases in other consumer assets and liabilities, in the same way as gifts and other lump sums received.

Purchases of non-financial assets are not counted as part of saving except in the case of residential real estate and business capital formation by self employed income units. These are considered to be income yielding assets in contrast to durable consumer goods such as motor cars, washing machines, refrigerators, furniture, etc. This corresponds with the usual treatment given in social accounting systems. House maintenance expenditure on repairs and decorations is not considered to be a form of investment or saving. Expenditure on additions and alterations is, however, a positive component of saving. The gross outlay on residential property is entered as part of saving without taking depreciation into account. This is true for both new and existing owners. Social accounting practice varies in this respect.

When estimating the saving of an individual instead of that of a whole nation some types of transactions or asset transfers must be taken into account that ordinarily cancel out for the aggregate of consumers. For example, in the preceding two paragraphs we mentioned types of individual asset accumulation or decumulation that are not relevant for aggregate saving, namely purchases or sales of existing residential real estate and existing securities. A more difficult estimation problem arises in connection with gifts

and other lump sum payments. These can obviously be disregarded at the national level, but should an individual consumer be assumed to be saving if he builds up his bank account through the receipt of a gift? For recipients of cash gifts, or other lump sum payments, we enter the amount received as a negative item in the savings calculation to offset any possible increase in other asset accounts. Similarly, for donors, (in the case of gifts) we treat the amount paid as a positive item in saving. For the sample and for the economy as a whole this procedure is quite correct, but it may cause some individual respondents to have extreme values for their total saving. A difficulty arises in connection with legacies, where our sample can contain only recipients and not donors.

Finally we come to one of the most important components of personal saving, namely earnings retained in their enterprises by self employed. Ideally, this component should be estimated as the change in net worth, i.e. the change in the net value of all business assets and liabilities between the beginning and end of an accounting period. We do not estimate complete formal accounting statements for the business, professional or farm enterprises owned by our consumer respondents. We do, however, ask them to give the amount of their net profit before taxes. We impute taxes to them on the basis of their family structure. We also ask them to state the amount of withdrawals for living expenses and other selected expenditures. Net profits less the sum of taxes and withdrawals yield our *residual* estimate of retained earnings. Transfers of personal funds into or out of productive enterprises are accounted for by adding to retained earnings new personal funds invested or subtracting receipts from liquidation of business. Total savings of an entrepreneurial income unit should not be affected by these latter two transfer items.

Savings can be arrived at by two accounting routes. We can either estimate net changes in assets and liabilities (balance sheet mutations) or the difference between income and expenditure (profit and loss statement or income statement flows). The Savings Survey approach proceeds by the former route except for business saving where we estimate the residual between profits and the sum of taxes and withdrawals. The partial use of the latter route is probably satisfactory as a relatively inexpensive way of getting at retained earnings, but does raise certain problems in the case of those self employed who do not separate their personal and business liquid assets. If we reckon the entire change in liquid assets as personal saving it would involve us in double counting to the extent that such changes would be partially reflected in the estimate of retained earnings. If we ignore the whole change, as we actually do for ordinary bank accounts, we shall fail to detect some elements of personal saving. It has been assumed that the mixed accounts are ordinary bank accounts, but it must be recognised that other components of liquid assets can be jointly held by individuals and enterprises. We possibly have some double counting as a result of reckoning the entire change in these other liquid assets as personal saving together with retained earnings.

Later on, in comparing savings in 1951-52 and 1952-53, we shall have to take account of the fact that retained earnings were estimated differently in the two years. In the 1953 Survey, respondents were asked about specific withdrawals from business earnings in addition to withdrawals for living expenses. In 1952, they were simply asked about withdrawals for living expenses. Moreover, in 1953 farm operators were given the same accounting treatment as businessmen, but on the previous survey, their business savings were estimated directly as the net expenditure on fixed capital and the net change in the value of stocks of working capital.

In the above outline of savings components we have called *business saving* the sum of retained earnings and personal funds put into the business less personal funds received from the sale of business assets. Actually, the practice has varied from Survey to Survey in the definition of the concept of business saving. In the 1954 Survey, business saving is simply calculated as retained earnings. Personal transfers into and out of the business are included in a residual saving compartment. In the other Surveys, business saving has not been identified precisely with retained earnings, but the treatment of personal-business transfers has been consistent with the same definition of total saving in all Surveys.

SAVING DURING THREE YEARS

Since 1950, the national income accounts have shown a steady growth of personal saving.¹ Saving, estimated as the difference between net income and expenditure (before providing for depreciation and stock appreciation), shows the following results for calendar years :

TABLE I
Aggregate Personal Saving before Providing for Depreciation and Stock Appreciation

<i>Calendar year</i>	<i>£ million</i>	<i>Financial year¹</i>	<i>£ million</i>
1950	132		
1951	273	1951-52	516
1952	690	1952-53	734
1953	910	1953-54	928
1954	909		

¹ Financial year approximations provided by Central Statistical Office on basis of selected quarterly or monthly data, or by interpolation.

In addition to noticing the upward movement, we should point out the large jump between 1951 and 1952. Between this pair of years there was a similarly large jump in the unexplained residual between aggregate saving and direct estimates of those components for which records exist.²

In the Saving Surveys of 1952, 1953 and 1954 estimates have been made of the distribution of personal savings in each of the financial years just preceding the Surveys. These distributions are presented elsewhere in this BULLETIN.³

¹ See *Preliminary Estimates of National Income and Expenditure, 1948 to 1954*, Cmd. 9423 (London : H.M. Stationery Office) 1955, Table 2.

² C. T. Saunders, 'Some Problems in the Estimation of Personal Savings and Investment' read November 10th, 1954, before the Manchester Statistical Society.

³ See T. P. Hill, BULLETIN, this issue, p. 144.

There is an apparent stability in the distribution of saving in the first two of the three annual surveys with a substantial growth in the 1954 Survey. This time pattern does not match that provided by the national income estimates above, but if those calendar year figures are changed to financial year figures so as to cover the same time period as the Surveys we find that the large jump from 1951 to 1952 is considerably smoothed; thus we are interested in accounting for two annual increments of the order of £200 million, rather than one of over £400 million and a second of over £200 million.

In a previous article, analysis of response rates from the Saving Survey of 1953 indicated a serious deficiency in the representation of self-employed income units.¹ For estimating saving this is a most serious deficiency. The occupational distributions of saving in all three Surveys show an overwhelming importance of saving by self-employed, compared to other groups in the economy.

TABLE II
Saving by Occupational Groups (average saving in £'s)

Occupation	Distribution of income units (%)		Distribution of income units (%)		Distribution of income units (%)	
	1951-52		1952-53		1953-54	
Self-employed	136	(6)	129	(4)	79	(7)
Managers and technical ...	7	(6)	22	(7)	40	(10)
Clerical and sales	— 10	(12)	— 2	(14)	— 4	(11)
Skilled manual	3	(37)	0	(35)	12	(38)
Unskilled manual	— 2	(17)	1	(17)	4	(13)
Retired and unoccupied ...	— 21	(22)	— 15	(23)	— 16	(21)
All occupations	4	(100)	4	(100)	11	(100)

We have no particular evidence that self-employed respondents were reporting less accurate data on the 1953 than on the 1952 Survey; we simply feel that there were too few represented in this category in the second Survey. If we assume the previous year's occupational distribution for the 1953 Survey but use the actual mean saving reported by occupational groups in 1953, our estimate of mean saving would be £6 instead of £4.

We noted above (p. 177) that business savings were estimated differently on the first two Surveys. If respondents had been specifically probed in 1952, as they were in 1953 and 1954, we would have estimated about £47 less in the form of retained earnings per self-employed income unit. This amount is the sum of specific withdrawals chargeable to business income that were asked for in explicit questions during 1953.² An error of this magnitude

¹ See BULLETIN, Vol. 17, No. 1, February 1955, pp. 89-126. Although occupation and income are highly correlated variables, it can be argued on the basis of material presented in the previous article that the most serious response problem, lending bias to the estimates from the 1953 Survey, is under-representation of self-employed income units and not merely of high income units.

² We are possibly overestating this amount slightly since some major withdrawals were taken into account where possible in the editing of the 1952 schedules. Against this possibility we must take into account the fact that surtax was under-estimated in editing the 1952 Survey. This would have the effect of over-estimating business retained earnings which were computed as residual profits after deducting taxes and withdrawals.

among non-farm self-employed (5 per cent of the sample in 1952)¹ would decrease average saving in the entire sample by about £2 for 1951-52.

With these adjustments in mind, we suggest as an approximate time series of average personal savings per income unit :

1951-52	1952-53	1953-54
£2	£6	£11

The figures in this series move in the same fashion as do the national income estimates, but the year-to-year changes are closer to £100 million than to the £200 million in the national income accounts adjusted to a financial year basis. Lydall, in analysing the saving data from the 1952 Survey, estimated the amounts needed to reconcile Survey and national accounting totals.² Among major items of reconciliation, employer contributions to pension funds and earnings of life and pension funds over their expenses, taxes, and annuities have been growing by about £25-50 million per annum in recent years. This accounts for part of the difference between Survey and National Income aggregates.

Apart from the distributions of amounts saved and the means of these distributions over three years, much light is thrown on the saving process by examination of the savings-income relations in each of the three surveys.

TABLE III
Mean Saving by Classes of Net Income
(£)

Net Income	1951-52 ¹ Means		1952-53 ² Means		1953-54 Means	
	Saving	Net income	Saving	Net income	Saving	Net income
0— 99	—19	76	—15	79	—60	80
100— 199	—14	144	—10	143	— 8	146
200— 299	— 6	247	— 3	249	— 1	246
300— 399	3	348	2	348	5	349
400— 499	—11	443	— 7	442	10	445
500— 599	17	542	6	539	10	545
600— 699	0	649	} —4	675 {	17	649
700— 799	33	748			31	748
800— 999	75	880	40	875	13	888
1,000—1,499	119	1,190	} 207	1,389 {	186	1,194
1,500—1,999	321	1,660			257	1,696
2,000 and over	906	2,940			707	2,346

¹ The mean values of net income by classes of net income are approximate.

² The estimates of mean saving and mean net income by classes of net income are taken from a separate multivariate analysis of the 1953 data in which some cases, not ascertained for values of any one of the many variables considered, are excluded.

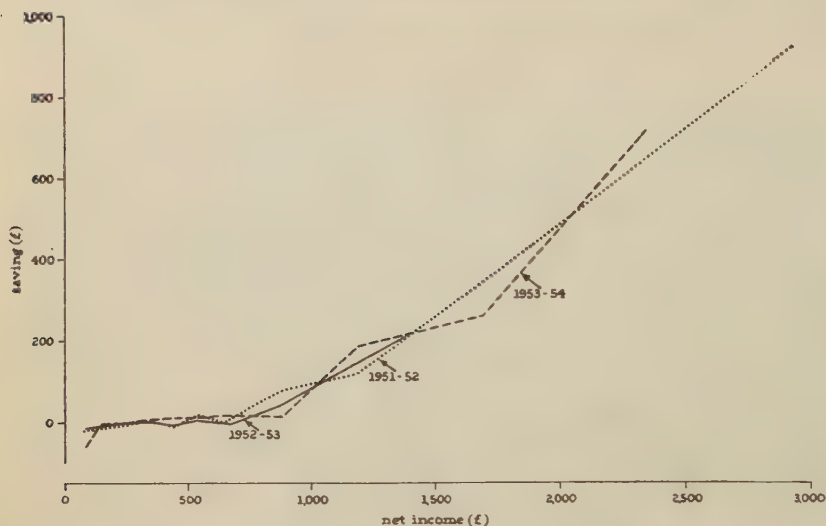
When the data of Table III are plotted on a single chart, as in Figure 1, the three broken-line curves are so intertwined that it becomes difficult to identify them separately. We may conclude, therefore, that savings and income have varied in the past three years, but that their relationship, the *propensity to save*, has not.³ In 1953, had we included more self-employed income units in

¹ Recall that farmers were treated differently on the 1952 Survey.

² See BULLETIN, Vol. 15, Nos. 10-11, Oct.-Nov. 1953, pp. 348-50.

³ As pointed out in the BULLETIN, February, 1955, net income from the 1952 Survey does not include imputed rental from owner occupied residences. Correction of income figures for this under-statement and possible adjustment of saving as noted above on p. 178, would not alter the graphical picture very much.

FIGURE 1
The Savings-Income Relationship from Three Surveys



the sample, we would undoubtedly have estimated larger values for mean saving and mean income, but the *relationship* between saving and income for those units who were successfully interviewed is quite similar to those for the other two Surveys. It seems reasonable to expect this stability in the propensity to save during a relatively short period of time, and the fact that our samples produce such stability gives us confidence that the data are useful in studying distributions of, and inter-relationships between, economic variables even though there are some biases or other deficiencies in the material collected.

WHO ARE THE SAVERS ?

As Table XII in the article by T. P. Hill shows, there are nearly twice as many income units adding to their wealth (positive savers) as subtracting from it (negative savers) in recent years.¹ Between eleven and thirteen per cent are neutral, neither adding to nor subtracting from their personal wealth. What are the characteristics of these savers and dis-savers ? In Tables II and III we have already shown the influence of occupational and income differentials on the average amounts saved. These patterns of averages are deceptive in giving an appearance of great regularity or uniformity. Actually behind these averages lies a large amount of dispersion. Table IV summarizes the *distribution* of saving by a large number of relevant economic and demographic characteristics.² This and subsequent tables on which our analysis

¹ BULLETIN, this issue, p. 144.

² Table IV and the subsequent tabulations in this section are based primarily on data from the 1953 Survey, for which a comprehensive set of computations have already been made. In a later section, some preliminary results from the 1954 Survey are introduced.

is based will generally present frequency distributions and mean values but no sampling errors. The latter have not yet been computed except for selected statistics in the 1952 Survey. There is not space in the tables to present simultaneously the frequency distributions of the classifying variables by which savings are analysed. The simple frequency distributions of income units by income, income change, liquid assets, occupation, housing status, age and other variables are given in a previous article.¹

Income

Although the average amount saved rises, with some irregular exceptions, from low to high income receivers, we find the pattern of dispersion interesting and revealing. In low income classes, there is a substantial amount of nil or slightly positive saving. None of the units with incomes under £100 per annum save much, but some of them dis-save considerably. Many of those who are not saving at all or saving, positively or negatively, by small amounts are either very poor people or secondary income units receiving financial assistance from the associated primary unit. Some of the dis-savers are older people living on capital or other people who temporarily have low incomes and are living on accumulated assets. This general pattern prevails in the next few income classes, but people begin to penetrate higher saving brackets of £100 or more after they reach the income level of £500. The large and relatively stable fraction saving small amounts, £1-24, in the income classes below £500 is noteworthy. In the uppermost income classes, people have more freedom of choice and some dis-save large amounts while others, more generally, save large amounts. Dispersion thus grows with the size of income, a not uncommon phenomenon.

Income change

The variation of saving with income change is much less regular than in the case of income level; nevertheless there is a discernible positive correlation between saving and income change. People who have experienced a large decline in income sometimes dis-save large amounts, if they have the means, and maintain their customary living standards. There is a somewhat surprisingly large number of small savers in each class of income decrease. The situation is less regular among those receiving an income increase. On the average, these units tend to be savers, but there are significant dis-savers in this category.

There is a positive correlation between income level and income change. Hence the *net* relation between savings and either of these variables will be different from the *gross* relations we have presented in Table IV. The *net gradient* of saving with respect to either variable will be somewhat smaller than either *gross gradient*.

Liquid assets

The possession of liquid assets is one of the major factors enabling people to spend more than their income in any period as short as one year.² A high

¹ BULLETIN, Vol. 17, No. 1, February, 1955, pp. 89-126.

² Other enabling factors are consumer credit and non-income receipts such as capital gains, gifts, or various windfalls.

TABLE IV
Distributions of Saving by Economic and Demographic Characteristics
Savings Survey 1953
(percentages of income units)

	Negative saving (£)						Positive saving (£)						Mean
	200 & over	100-199	50-99	25-49	1-24	0	1-24	25-49	50-99	100-199	200 & over	N.A.	saving (£)
Gross Income (£) :													
0-99 ...	3.8	5.8	3.5	5.3	7.2	38.7	33.6	—	—	—	—	1.9	-19
100-199 ...	0.9	2.5	6.5	5.2	10.7	25.5	42.5	2.0	1.6	0.2	—	2.4	-10
200-299 ...	0.6	1.6	5.0	7.0	16.7	16.9	39.9	9.2	1.0	0.5	—	1.6	-4
300-399 ...	1.1	1.6	2.5	8.0	10.4	7.3	44.3	12.6	9.6	1.2	—	1.5	4
400-499 ...	2.5	3.7	4.0	8.6	15.1	2.3	40.3	14.4	6.3	0.8	—	2.0	-5
500-599 ...	5.1	3.3	3.6	4.8	12.8	3.8	26.2	17.8	12.8	6.8	1.4	1.6	5
600-699 ...	4.7	3.2	10.2	7.9	11.2	1.8	23.3	15.0	8.6	10.9	3.2	0.2	-1
700-799 ...	11.3	2.4	6.1	2.6	7.8	1.4	22.5	14.6	15.0	8.0	4.0	4.5	-13
800-999 ...	6.3	7.2	8.2	5.8	6.5	0.4	6.8	9.4	22.7	13.3	5.9	7.5	17
1,000-1,499 ...	11.5	4.9	1.3	3.3	1.3	0.7	4.3	2.6	11.8	26.9	24.6	6.9	65
1,500-1,999 ...	19.2	2.6	2.6	2.6	2.6	2.6	2.6	5.1	5.1	10.3	39.8	5.1	132
2,000 and over ...	13.4	1.5	1.5	—	—	—	4.5	—	4.5	6.0	65.7	3.0	471
Income change (%) :													
Positive													
50 and over ...	1.8	5.9	3.0	11.4	8.5	18.7	30.4	3.9	4.8	4.3	4.8	2.5	-1
25-49 ...	5.9	1.0	6.0	4.2	9.1	11.1	40.5	7.4	5.9	1.0	6.9	1.0	50
15-24 ...	4.5	—	6.9	6.9	17.0	14.0	29.5	10.4	5.5	2.2	2.8	0.3	-2
5-14 ...	2.8	3.2	3.9	5.0	11.8	13.4	36.4	9.4	8.6	2.5	2.1	0.9	2
0-4 ...	2.8	4.3	4.4	6.9	15.5	6.8	35.4	8.4	7.4	4.8	0.6	2.7	-3
Nil ...	2.8	1.9	4.8	6.4	9.4	12.7	35.4	12.5	7.1	3.8	1.3	1.8	6
Negative													
0-4 ...	1.0	2.0	5.5	1.0	21.8	1.0	19.3	21.8	10.9	1.0	8.4	6.4	37
5-14 ...	2.1	3.4	2.7	5.6	18.3	8.1	30.2	13.2	5.1	4.0	3.9	3.4	14
15-24 ...	0.8	5.2	11.3	6.6	10.9	7.3	40.9	7.7	1.2	3.0	3.0	2.2	-4
25-49 ...	7.4	2.1	7.4	15.0	3.4	2.9	36.0	13.7	5.8	3.4	3.1	—	-22
50 and over ...	10.8	7.9	17.3	1.4	1.4	—	51.8	7.9	—	1.4	—	—	-44
Not ascertained ...	3.8	3.2	3.6	7.9	9.3	14.0	29.0	8.1	7.1	3.7	3.3	6.9	10
Liquid asset income ratio (%) :													
1,000 and over ...	19.4	16.8	18.1	8.4	7.1	8.4	8.4	7.1	2.6	—	3.9	—	-75
500-999 ...	9.2	13.2	13.2	0.9	0.9	7.5	23.7	21.9	7.0	1.8	0.9	—	-32
300-499 ...	8.3	17.3	10.8	21.3	0.7	4.3	15.2	5.4	6.9	1.4	4.3	4.0	-61
200-299 ...	3.6	7.3	7.3	8.0	—	3.6	37.0	5.6	7.7	9.2	10.9	—	51
100-199 ...	12.1	4.5	14.2	13.5	8.3	6.7	18.0	3.7	6.4	5.6	5.7	1.1	-31
50-99 ...	11.3	5.2	9.7	10.3	13.8	5.7	20.0	8.8	6.1	7.1	2.0	—	-30
30-49 ...	5.0	6.1	8.5	6.3	13.4	3.9	25.5	16.1	6.5	4.8	3.7	0.2	-5
20-29 ...	2.5	7.6	7.4	9.2	18.8	2.0	23.2	12.4	8.4	7.3	1.3	—	-2
10-19 ...	0.3	0.5	5.3	7.3	18.5	3.2	26.9	13.4	15.8	6.2	2.7	—	23
0.1-9 ...	0.6	1.0	1.6	5.9	16.3	5.2	42.2	11.4	10.4	3.5	1.9	—	22
Nil ...	0.2	0.7	1.5	3.7	9.1	22.5	47.0	10.0	3.7	0.8	0.5	0.4	9
Occupation:													
Self-employed ...	5.9	2.9	5.3	5.6	4.3	4.6	12.2	7.3	14.2	11.7	22.5	3.6	129
Managers ...	8.8	6.6	5.8	6.2	6.6	2.1	11.2	9.9	14.6	12.9	10.1	5.1	22
Clerical and Sales ...	4.0	3.7	2.9	5.7	12.5	10.3	32.7	10.9	10.5	3.2	1.0	2.6	-2
Skilled ...	2.9	2.1	4.6	6.6	13.9	5.3	37.0	14.9	7.7	3.8	0.4	0.8	0.3
Unskilled ...	1.3	0.9	3.0	6.4	13.0	12.9	43.8	10.1	5.5	1.5	—	1.6	1
Retired and unoccupied	1.7	4.3	7.4	7.2	10.0	23.1	38.0	4.0	0.8	0.2	0.3	3.0	-15
Housing status:													
Owens outright ...	7.3	4.9	8.7	8.9	10.4	7.0	16.8	9.0	10.1	7.5	5.8	3.7	7
Owens with mortgage	4.2	5.7	1.9	3.1	8.0	1.5	22.2	16.2	14.8	9.5	7.2	5.8	35
Rents council house	2.2	1.9	3.2	9.0	16.9	6.0	41.8	11.4	5.3	0.7	0.5	1.1	-3
Rents, other unfurnished ...	2.8	2.4	6.1	6.9	11.0	8.7	41.5	10.1	4.6	3.0	1.2	1.5	-0.3
Rents, furnished ...	1.9	1.0	7.2	2.9	13.4	14.4	29.7	4.8	22.0	—	1.0	1.9	1
Rent free ...	2.0	2.6	5.6	7.0	8.6	18.8	30.6	10.0	5.0	7.8	0.4	1.6	-0.4
All primary units ...	3.5	3.1	5.4	7.0	11.6	7.6	34.8	10.9	7.2	4.2	2.5	2.3	5
Secondary units ...	1.7	2.6	3.0	4.7	12.3	23.1	34.9	8.5	6.0	1.0	0.7	1.5	-0.1
Age:													
18-24 ...	0.3	0.9	2.0	4.5	15.7	26.3	36.0	8.6	5.3	0.4	—	—	3
25-34 ...	4.1	3.1	6.4	7.6	12.2	6.0	30.7	12.7	9.6	4.2	2.6	1.0	4
35-44 ...	3.7	2.8	3.0	5.0	13.2	2.6	36.3	10.0	11.6	5.8	3.5	2.5	15
45-54 ...	4.3	3.4	4.2	7.2	10.1	4.4	35.4	13.4	7.6	5.1	2.7	2.3	6
55-64 ...	2.2	2.5	5.2	8.4	10.0	10.3	35.2	13.0	4.0	4.4	1.6	3.4	8
65 and over ...	2.5	4.1	7.3	6.2	10.3	22.7	35.7	5.0	2.0	0.3	1.0	3.0	-13

ratio of beginning-of-year liquid assets to income (50 per cent or more) is associated in Table IV with frequent and large dis-saving. Some of the high ratios are cases of aged people with low incomes or entrepreneurs with temporarily poor business. These income units are drawing on capital to maintain consumption. Those whose incomes are low because of a decline and who at the same time possess liquid assets will be extremely likely to dis-save. In this way beginning liquid assets and income change are joint factors in explaining saving behaviour.

It should be noted that the dispersion of saving is larger for units with high than with low ratios of liquid assets to income

Occupation

To a large extent occupational differentials are indicators of income differentials. We have already noted the peculiar importance of self-employed income units for saving, and this is more than a simple reflection of income differences. Among the other occupational groups we may cite the retired and unoccupied category, composed largely of aged persons who have distinct patterns of saving. While they, on balance, are using up their wealth, they also tend to be more concentrated than others about nil or low levels of saving.

Housing status

Two outstanding features emerge from the relation between saving and housing status. On the one hand, the high saving among home owners is not simply a result of their comparatively high income position; the home owners with mortgages consist of a distinctly large number of positive savers who are gradually acquiring an equity in their homes through contractual repayment of mortgage debt. On the other hand, secondary income units are frequently young people living with their parent family. They have small incomes and small amounts of saving with little dispersion. People who live rent free are not unlike secondary units in their saving distribution. About one-third of these are aged people, 65 years and over.

Age

The most youthful income units tend to save the little or small amounts compatible with their usually small incomes. It would seem, though, that they have good motivation to save in preparation for the life ahead of them. Saving, together with income, reaches a peak in the age group 35-44, and thereafter generally declines, as does income, as people get older. Income units headed by persons 65 years of age or older draw upon capital to about the same extent as do income units headed by a retired or unoccupied person. In fact, these two groupings obviously overlap to a large extent.

Age is closely associated not only with the level of income but also with its rate of change. Young people are more frequently on their way up the income scale and obtain more large percentage increases than older people. In age groups over 55 years, incomes are more frequently at steady levels or declining. In addition liquid assets are largely concentrated among older

people i.e. those aged 45 years or older. They need to draw on capital and are able to do so. If we were to treat annuity receipts or other pension benefits as negative saving instead of income, there would be even a more marked non-linear pattern connecting saving to age.

Composition of income unit

Although a tabulation is not conveniently available on the distribution of saving by size of income unit we see from the following compilation in Table V how average saving varies by size of unit.

TABLE V
Mean Saving by Number of Persons in Income Unit
Saving Surveys, 1952 and 1953
(£)

<i>Number of persons</i>	<i>1952</i>	<i>1953</i>
1	—2	—2
2	3	—2
3	10	14
4	11	13
5	18	9
6 or more	8	8

Single person units are frequently young secondaries or aged widows or widowers. These income units will often dis-save or save only small amounts. Two-person units are often either old couples without dependent children who will depress the average level of saving in this group or young married couples embarking on accumulation of durable goods.

Income is closely correlated with size of the unit; therefore part of the relationship in Table V is due to the effect of income.

The dynamics of family formation, insofar as they can be observed in a sample of the type we have, provide some interesting insight into the saving process. In a separate unpublished tabulation, income units have been grouped according to whether they acquired or lost members through different causes. Nearly all income units (93 per cent) experienced no change in composition during the twelve months preceding the interview date. Outstanding characteristics of those containing some changes are positive saving for income units with a birth, negative saving for income units with marriage, positive saving for income units with a child leaving, negative saving for income units with a death. These are all rough estimates of averages based on very few observations.

Marriage entails extra expense and therefore dis-saving. It also may occur at a low point in the income cycle. While birth of a child also necessitates some major expenses, it is associated with some specific forms of saving such as the provision for life assurance and with higher income status. When older children leave the income unit, necessary expenditures are reduced, and saving may benefit. Death of a head or wife entails substantial expenditure, loss of income, and drawing down of capital. Thus we find much negative saving in the associated categories.

THREE DIMENSIONAL TABULATIONS—THE CORRELATES OF INCOME

Since the main factors influencing saving behaviour are mutually inter-related, we get a better picture of this influence by cross classifying the distribution of saving between two variables jointly. Ultimately one might consider many variables simultaneously but the sample is not large enough to obtain reliable distributions of saving when 5-10 variables are simultaneously cross classified.¹ In addition, the resulting picture becomes exceedingly complicated and defies quick and easy comprehension. Multiple regression and other multivariate statistical summarisations are needed to treat the data in full generality, and that approach will be taken up in a separate investigation. At this stage, we shall push the preceding analysis further by examining the distributions of saving for different values of two variables simultaneously considered.

In Table VI, we have the distributions of saving by income classes for groups differing in their age, their liquid assets at the beginning of the year, and their income change. We start out with the basic assumption that income is a major determinant of saving behaviour and then examine the added influence of age, liquid assets, and income change, each of which is an income correlate. The saving-income relationship is affected by these additional variables ; moreover, we are able to see better whether they make an independent contribution towards explaining saving behaviour or merely reflect the correlated influence of income.

Age and income

In each age class there is obviously a positive association between savings and income. In the upper income classes there is a concentration of large positive savers. The lower income classes of each age group tend to have many zero or small savers (less than £25, plus or minus). We also find the characteristic wide variability of saving in upper income classes for all age groups. The relation between age and saving is less striking when looked at within fixed income classes than when unrestricted as in Table IV, suggesting that part of the gross relationship between saving and age is actually a reflection of the saving-income relationship. Within income classes, saving does not uniformly rise to a peak during the ages 35-44 years, but it is generally low in the youngest and oldest age classes.

Liquid assets and income

As we move up the liquid asset scale, we notice a greater tendency towards dis-saving in low income groups. In the uppermost income classes, there are no clear and systematic differences in the saving distributions for each of the several asset classes, except that there are fewer large dis-savers in the two lowest asset groupings. Instead of containing so many dis-savers, the high

¹ Even some of our distributions of saving by two other variables simultaneously are unreliable because of sparseness of cases. While individual cells of our tables are frequently based on very few cases, and are therefore not reliable estimates in isolation, sequences of such cells over several classes of income, age, liquid assets, etc., may produce useful estimates of relationships or behaviour patterns. The similarity of some basic patterns in all three Surveys adds to our confidence in them despite the sampling errors involved.

TABLE VI

*Saving-Income Distribution by Classes of Age, Beginning-of-Year Liquid Assets
and Income Change*

*Savings Survey, 1953
(percentages of income units)*

Saving (£)	Net Income (£)									
	0-99	100-199	200-299	300-399	400-499	500-599	600-699	700-799	800-999	1,000 & over
Age 18-24 years										
<i>Positive :</i>										
100 and over	...	—	—	1.7	3.6	—	—	—	—	—
25-99	...	—	5.3	14.7	22.1	30.9	37.1	100.0	—	—
±24	...	97.2	90.5	76.7	59.8	50.9	62.8	—	—	—
<i>Negative :</i>										
25-99	...	—	2.3	8.3	15.7	10.9	—	—	—	—
100 and over	...	2.7	1.9	0.3	0.8	3.6	—	—	—	—
Age 25-34										
<i>Positive :</i>										
100 and over	...	—	1.3	—	0.3	8.1	12.3	8.4	8.2	32.1
25-99	...	—	—	9.5	29.6	21.9	24.9	21.6	43.8	28.3
±24	...	—	75.5	77.4	52.1	49.4	34.8	37.0	30.2	—
<i>Negative :</i>										
25-99	...	—	8.2	8.8	12.4	13.0	20.7	19.3	15.1	11.3
100 and over	...	—	6.9	0.7	5.5	7.6	7.1	12.7	2.7	28.3
N.A.	...	—	8.2	3.7	—	—	—	0.8	—	—
Age 35-44										
<i>Positive :</i>										
100 and over	...	—	—	3.2	2.0	1.9	8.1	9.0	27.6	30.5
25-99	...	33.3	2.6	10.0	20.6	20.7	29.9	24.2	29.1	27.4
±24	...	33.3	97.4	67.7	67.9	58.7	48.9	46.4	17.6	18.4
<i>Negative :</i>										
25-99	...	—	—	15.8	6.8	11.4	2.6	8.3	13.3	1.1
100 and over	...	33.3	—	—	2.8	4.9	9.9	11.2	5.2	10.0
N.A.	...	—	—	3.2	—	2.2	0.8	0.6	7.1	12.6
Age 45-54										
<i>Positive :</i>										
100 and over	...	—	1.4	—	—	0.3	12.3	19.7	11.0	11.9
25-99	...	—	2.8	10.5	25.1	14.3	36.9	17.3	32.3	35.8
±24	...	50.0	85.6	76.5	56.1	65.0	33.1	32.7	8.4	4.8
<i>Negative :</i>										
25-99	...	—	8.9	8.4	15.9	6.1	12.0	16.8	11.0	35.7
100 and over	...	50.0	1.4	3.3	2.5	8.7	5.2	12.5	27.8	7.2
N.A.	...	—	—	1.2	0.4	5.5	0.4	1.0	9.7	4.8
Age 55-64										
<i>Positive :</i>										
100 and over	...	—	—	0.6	3.4	4.5	7.8	20.0	29.4	46.2
25-99	...	—	7.4	12.4	29.5	10.6	43.2	—	25.5	38.5
±24	...	85.9	75.4	73.3	46.6	62.7	7.8	40.0	—	7.7
<i>Negative :</i>										
25-99	...	12.0	11.8	10.5	10.6	14.3	29.7	17.4	25.5	—
100 and over	...	—	4.0	2.9	3.3	6.9	5.7	8.0	15.7	7.7
N.A.	...	2.2	1.3	0.6	6.7	0.8	5.7	14.7	3.9	—
Age 65 and over										
<i>Positive :</i>										
100 and over	...	0.3	—	—	0.8	—	9.8	7.1	6.7	66.7
25-99	...	—	3.0	6.0	24.3	41.5	4.9	—	43.4	11.1
±24	...	78.1	73.2	69.7	60.3	25.2	85.4	85.7	6.7	—
<i>Negative :</i>										
25-99	...	11.5	16.7	15.6	10.4	4.5	—	—	—	—
100 and over	...	8.0	3.7	6.0	4.4	19.2	—	7.1	43.3	11.1
N.A.	...	2.1	3.4	2.8	—	9.6	—	—	—	11.1

TABLE VI (continued)

Saving (£)	Net Income (£)										
	0-99	100-199	200-299	300-399	400-499	500-599	600-699	700-799	1,000-999	1000 & over	
Liquid assets beginning of year, nil											
Positive :											
100 and over	...	—	—	1.0	—	2.0	2.9	6.2	11.8	42.9	77.8
25-99	...	—	3.5	8.7	22.4	17.6	34.9	18.0	32.4	57.2	—
±24	...	92.6	93.2	88.3	67.6	69.6	57.1	68.6	38.2	—	11.1
Negative :											
25-99	...	2.5	3.3	2.0	10.0	9.2	2.9	7.3	5.9	—	—
100 and over	...	5.0	—	—	—	1.7	2.1	—	5.9	—	11.1
N.A.	...	—	—	—	—	—	—	5.9	—	—	—
Liquid assets beginning of year, £1-199											
Positive :											
100 and over	...	—	—	—	1.4	5.1	7.5	11.6	17.2	24.8	68.6
25-99	...	4.6	6.1	13.7	26.5	21.0	35.5	26.9	49.6	40.4	3.9
±24	...	90.9	76.0	69.2	56.7	60.3	39.9	40.6	17.6	21.4	7.8
Negative :											
25-99	...	4.6	14.6	16.7	11.6	9.9	13.0	13.9	11.2	11.0	—
100 and over	...	—	3.4	0.4	3.7	3.5	4.1	7.1	4.4	2.4	19.6
Liquid assets beginning of year, £200-499											
Positive :											
100 and over	...	3.4	—	—	0.9	1.5	11.9	20.5	22.3	42.4	64.1
25-99	...	—	—	6.8	22.7	26.0	15.7	5.1	27.7	28.8	6.3
±24	...	32.7	35.2	39.5	49.5	40.7	24.1	31.6	16.0	—	3.1
Negative :											
25-99	...	60.3	39.1	41.9	15.9	13.6	27.9	9.4	13.8	22.7	6.2
100 and over	...	3.4	20.3	11.9	10.9	18.3	20.3	33.3	20.2	6.1	20.3
N.A.	...	—	5.4	—	—	—	—	—	—	—	—
Liquid assets beginning of year, £500-999											
Positive :											
100 and over	...	—	3.3	—	11.5	—	28.0	16.7	51.0	29.2	70.2
25-99	...	—	1.7	—	33.8	11.5	24.8	5.1	3.9	8.3	8.6
±24	...	31.7	55.4	56.1	14.6	26.5	3.9	14.1	3.9	4.2	4.3
Negative :											
25-99	...	4.9	28.9	23.3	26.9	23.0	28.0	28.2	7.8	—	—
100 and over	...	63.4	10.7	20.5	13.1	38.9	8.3	35.9	33.3	58.3	12.7
N.A.	...	—	—	—	—	—	7.0	—	—	—	4.3
Liquid assets beginning of year, £1,000 and over											
Positive :											
100 and over	...	—	—	4.0	—	4.3	38.5	18.2	6.6	45.0	63.7
25-99	...	—	5.8	38.0	62.6	23.1	36.1	30.2	10.0	20.0	8.1
±24	...	—	69.5	20.0	18.8	30.8	2.4	6.1	—	5.0	4.8
Negative :											
25-99	...	48.0	18.8	8.0	5.0	6.6	2.4	39.4	36.6	10.0	1.6
100 and over	...	52.0	5.8	30.0	13.7	35.2	20.5	6.1	46.7	20.0	21.8

TABLE VI (continued)

Saving (£)	Net Income (£)									
	0-99	100-199	200-299	300-399	400-499	500-599	600-699	700-799	800-999	1,000 & over
Income increase 25 per cent and over										
Positive :										
100 and over	...	—	—	1.4	4.5	18.6	—	28.5	—	78.3
25-99	...	—	3.0	8.9	21.0	1.5	29.6	13.4	—	25.0
±24	...	73.2	79.1	69.0	46.9	89.6	38.9	43.4	—	—
Negative :										
25-99	...	—	1.5	14.3	30.8	3.0	12.7	6.7	52.4	25.0
100 and over	...	26.8	16.4	1.2	—	1.5	—	36.7	9.5	50.0
N.A.	...	—	—	6.5	—	—	—	9.5	—	4.3
Income increase 5-24 per cent										
Positive :										
100 and over	...	—	—	—	0.4	3.1	11.4	6.5	13.8	31.1
25-99	...	—	3.8	13.6	31.1	25.2	25.8	11.7	44.6	6.7
±24	...	96.6	85.2	75.3	55.3	52.0	37.9	54.7	15.6	14.4
Negative :										
25-99	...	2.9	9.9	8.7	10.2	9.6	18.4	11.2	3.6	14.4
100 and over	...	0.5	0.3	2.1	3.0	9.6	5.9	15.0	15.6	31.1
N.A.	...	—	0.7	0.4	—	0.3	0.5	0.9	6.6	2.2
Income change between ± 4 per cent										
Positive :										
100 and over	...	0.6	0.1	0.2	1.8	3.0	9.3	10.6	18.1	32.5
25-99	...	3.4	4.0	9.9	27.5	21.1	34.0	21.7	27.8	40.0
±24	...	69.5	77.4	74.7	56.0	55.4	39.1	41.1	19.3	13.0
Negative :										
25-99	...	15.0	11.4	11.2	9.2	10.8	9.8	15.9	19.4	8.5
100 and over	...	10.3	3.3	2.7	4.3	6.4	7.4	8.0	7.6	4.0
N.A.	...	—	1.2	3.8	1.4	1.2	3.3	0.2	2.6	7.7
Income decrease 5-24 per cent										
Positive :										
100 and over	...	—	1.7	—	—	7.3	—	35.2	21.2	71.4
25-99	...	—	5.1	6.5	2.6	17.2	29.3	32.4	46.2	14.3
±24	...	33.3	63.2	85.1	87.2	56.1	33.2	14.9	—	—
Negative :										
25-99	...	33.3	29.9	7.5	9.4	4.3	23.6	17.6	3.8	—
100 and over	...	—	—	1.0	0.9	11.6	7.0	—	28.8	—
N.A.	...	33.3	—	—	—	3.6	7.0	—	—	14.3
Income decrease 25 per cent and over										
Positive :										
100 and over	...	—	—	—	1.5	—	66.7	50.0	—	10.5
25-99	...	—	8.2	2.4	41.4	—	33.3	—	—	68.4
±24	...	50.0	71.7	63.5	22.6	34.3	—	—	—	—
Negative :										
25-99	...	—	10.7	29.3	26.3	50.0	—	—	—	—
100 and over	...	50.0	9.4	4.9	8.3	15.7	—	50.0	—	21.0
Income change not ascertained										
Positive :										
100 and over	...	—	—	5.5	—	—	13.3	25.6	40.7	10.0
25-99	...	—	1.1	17.6	15.7	18.4	42.2	30.3	6.3	15.0
±24	...	30.3	90.3	59.4	57.5	60.0	29.0	4.7	—	5.0
Negative :										
25-99	...	30.3	7.4	12.0	19.6	10.9	—	4.7	6.3	15.0
100 and over	...	39.6	1.1	—	1.1	—	13.3	30.2	40.6	—
N.A.	...	—	—	5.5	6.1	10.8	2.4	4.7	6.3	55.0

income-low asset distributions contain more at approximately zero saving levels. This tends to lower the saving-income relation at high income levels as one moves up the asset scale in much the same way that it lowers it at low income levels. The main effect of liquid assets is to have a negative or depressing influence on the saving-income relationship. It should be noted, however, that we find definite evidence of the basic saving-income relationship within each liquid asset class.

Income change and income

With some exceptions income change appears in Table IV to be positively correlated with saving, but the correlation of income change with income level is such that the effect of income change on saving is not very marked in Table VI. In the lowest income class there is more dis-saving as income decrease becomes larger. In the upper income classes, there is much dispersion. Conventionally, it is argued that people react slowly to income change. Increases are not immediately consumed and thereby lead to greater saving. This apparently does not happen with overwhelming frequency. Many people spend their large income increases. Similar dispersion can be noted at high income values among those receiving decreases in income.

Age and income change

Table VII clarifies further the effect of income change on saving. Age is perhaps more closely related to income change than to income level. In the middle age groups, 35-54, the usual positive relation between saving and income change is not apparent. In the more extreme age classes we find more large saving associated with income increase and more large dis-saving associated with income decrease.

Liquid assets and income change

Liquid assets and income change, though both important in interactions with income level, are together important in their own interaction effects. Income decrease is more prevalently associated with large dis-saving when occurring in combination with some liquid asset holdings, especially with amounts in excess of £200. For all classes of income change, there is more dispersion in saving at high than at low levels of liquid assets, yet through nearly all the asset range we find positive correlation between saving and income change.

Income expectations and income change

A combination of past income change with respondents' expectations of future income change shows interesting patterns. For example, among those who experienced a decline in income, there is a greater tendency towards positive saving for those expecting a further decrease and a greater tendency towards negative saving for those expecting a reversal of past income change. We might call the first type of income change 'permanent' and the second 'temporary', at least as far as the respondents' perceptions are concerned. With regard to those who experienced an increase in income, the situation is less clear. Those 'temporarily' exceed those 'permanently'

TABLE VII

Saving—Income Change Distributions by Classes of Age, Beginning-of-Year Liquid Assets and Income Expectations
Saving Survey 1953
(percentages of income units)

Saving (£)	Percentage Change in Gross Income					
	Decrease			Increase		
	25 or more	5-24	± 4	5-24	25 or more	Not as-certained
Age, 18-24 years						
Positive :						
100 and over	...	—	—	0.4	1.7	—
25-99	...	33.3	28.2	14.5	16.6	14.1
± 24	...	33.3	43.5	79.3	77.8	78.2
Negative :						
25-99	...	33.3	28.2	6.2	4.9	6.5
100 and over	...	—	—	0.4	6.2	1.2
Age, 25-34 years						
Positive :						
100 and over	...	3.7	14.0	3.0	6.6	13.5
25-99	...	—	14.7	23.9	24.0	24.0
± 24	...	35.2	53.4	51.3	50.9	30.6
Negative :						
25-99	...	40.7	14.0	14.2	10.2	18.4
100 and over	...	20.4	3.9	6.3	8.2	6.8
N.A.	...	—	—	1.2	—	6.8
Age, 35-44 years						
Positive :						
100 and over	...	6.2	7.5	9.5	9.2	14.6
25-99	...	20.0	17.7	22.6	23.9	16.0
± 24	...	56.9	60.4	52.2	48.2	43.8
Negative :						
25-99	...	16.9	3.9	9.9	7.7	0.9
100 and over	...	—	7.2	5.5	8.5	11.8
N.A.	...	—	3.3	0.4	2.6	12.8
Age, 45-54 years						
Positive :						
100 and over	...	12.1	6.7	7.6	7.8	5.4
25-99	...	26.6	14.0	24.4	20.6	5.4
± 24	...	28.2	57.6	50.6	49.5	56.7
Negative :						
25-99	...	29.8	14.4	9.2	9.8	3.6
100 and over	...	3.2	6.6	5.2	11.4	17.1
N.A.	...	—	0.8	2.9	0.8	11.7
Age, 55-64 years						
Positive :						
100 and over	...	1.9	1.2	8.5	1.1	2.4
25-99	...	10.6	15.3	19.7	11.9	18.3
± 24	...	35.6	60.5	52.5	69.1	42.6
Negative :						
25-99	...	33.6	13.0	10.8	16.4	18.3
100 and over	...	18.2	3.6	5.2	0.5	2.4
N.A.	...	—	6.5	3.2	1.1	15.9
Age, 65 and over						
Positive :						
100 and over	...	2.4	1.6	1.3	0.9	2.1
25-99	...	15.6	—	7.1	42.9	12.3
± 24	...	62.9	60.6	66.8	46.3	58.9
Negative :						
25-99	...	2.4	20.5	13.5	9.2	23.6
100 and over	...	16.8	8.7	7.2	0.6	3.1
N.A.	...	—	8.7	4.1	—	—

TABLE VII (Continued)

Saving (£)	Percentage Change in Gross Income						
	Decrease			Increase			
	25 or more	5-24	± 4	5-24	25 or more	Not ascertained	
Liquid assets, beginning of year, nil							
Positive:							
100 and over	...	0.9	0.5	1.1	1.2	3.7	3.0
25-99	...	16.7	14.3	14.9	11.5	11.0	12.1
± 24	...	76.8	78.7	77.7	83.5	78.1	74.5
Negative:							
25-99	...	0.9	5.6	5.0	3.8	6.8	10.3
100 and over	...	4.7	1.0	1.2	—	—	—
Liquid assets, beginning of year, £1-199							
Positive:							
100 and over	...	—	11.2	4.9	2.8	6.7	11.3
25-99	...	25.8	14.0	21.7	25.6	10.0	26.7
± 24	...	24.2	54.6	59.2	59.2	59.5	45.4
Negative:							
25-99	...	50.0	16.9	11.3	9.3	15.1	10.0
100 and over	...	—	3.2	3.0	3.0	8.8	6.6
Liquid assets, beginning of year, £200-499							
Positive:							
100 and over	...	—	4.9	12.2	10.4	20.7	—
25-99	...	—	10.6	19.7	8.8	6.9	15.3
± 24	...	25.9	46.7	29.9	38.4	13.8	28.2
Negative:							
25-99	...	22.4	18.0	23.3	24.2	51.7	38.8
100 and over	...	51.7	19.7	14.9	18.4	6.9	17.7
Liquid assets, beginning of year, £500-999							
Positive:							
100 and over	...	46.4	20.6	15.8	17.5	3.7	20.4
25-99	...	—	—	17.7	8.5	—	24.1
± 24	...	—	19.0	24.9	20.2	24.1	20.4
Negative:							
25-99	...	39.3	22.4	19.2	25.5	24.1	7.4
100 and over	...	14.3	19.0	19.9	28.3	48.2	24.1
N.A.	...	—	19.0	2.4	—	—	3.7
Liquid assets, beginning of year, £1,000 and over							
Positive:							
100 and over	...	38.8	13.0	13.3	31.3	57.1	24.6
25-99	...	6.5	54.4	23.9	19.2	34.7	3.1
± 24	...	—	4.3	20.7	8.1	—	33.8
Negative:							
25-99	...	—	—	20.8	11.1	—	3.1
100 and over	...	54.9	28.2	21.3	30.3	8.2	35.4

TABLE VII (Continued)

Saving (£)	Percentage Change in Gross Income			Not ascertained
	Decrease	± 4	Increase	
Expect income increase				
Positive:				
100 and over	5.8	8.1	7.9	14.5
25-99	14.1	19.4	16.7	18.4
± 24	33.1	53.1	58.0	38.6
Negative:				
25-99	22.0	9.6	10.8	9.9
100 and over	18.1	9.3	6.3	9.2
N.A.	6.7	0.5	0.3	9.2
Expect about same income				
Positive:				
100 and over	3.6	4.3	3.7	3.7
25-99	13.3	17.6	15.8	13.8
± 24	64.4	57.7	64.1	57.3
Negative:				
25-99	12.6	12.4	9.7	15.1
100 and over	4.4	4.9	5.2	2.2
N.A.	1.5	2.9	1.4	7.7
Expect income decrease				
Positive:				
100 and over	12.0	13.7	15.4	10.9
25-99	19.6	28.3	10.3	2.7
± 24	47.8	47.9	42.7	60.3
Negative:				
25-99	13.8	4.8	15.8	15.1
100 and over	6.9	4.3	15.8	10.9
N.A.	—	0.8	—	—
Expected income not ascertained				
Positive:				
100 and over	10.5	2.0	3.5	—
25-99	14.8	16.3	21.1	20.0
± 24	53.7	67.4	60.7	60.0
Negative:				
25-99	16.0	8.1	9.4	—
100 and over	4.9	5.1	4.9	17.0
N.A.	—	0.9	0.4	3.1

up the income scale in the frequency of large positive and large negative saving. For all classes of past income increase, those expecting practically no change in income exceed other groups in the frequency of small saving, not exceeding positive or negative £25.

THE CONCENTRATION OF SAVING

The British consumer is usually regarded as a thrifty person. This view has little meaning by itself and should be put in the context of some frame of reference. Lydall¹ has shown a sense in which British consumers are less thrifty than their American counterparts. The former tend to save a smaller portion of their income at each *relative* income position. Saving statistics are not available for other countries and similar international comparisons cannot be made on a wider scale.

We saw earlier, however, that certain occupational groups, mainly self-

¹ H. F. Lydall, BULLETIN, Vol. 15, Nos. 10-11, Oct.-Nov., 1953, pp. 387-94.

employed and managerial, dominate the savings distribution; they save on the average many times as much as most of their fellow citizens. Similarly the highest income groups save much more per income unit than do others. We are led to put forth the hypothesis that a highly restricted group of people has done most of the saving, that the traditional view of the thrifty British consumer applies only to a small class, who have possibly attracted general attention by their special behaviour.

Income, as it is reckoned in the Savings Surveys, naturally shows a degree of concentration but much less than that of wealth. Moreover a comparison with similar data from the United States shows no more concentration of income here than there (before or after tax) but a much higher concentration of liquid asset holdings¹ in this country.

In Table VIII, we see that the top 3.5 per cent of income recipients in the 1953 Survey (those receiving £1,000 per annum or more) account for 33.9 per cent of saving by positive savers and 12.4 per cent of dis-saving by negative savers.² Thus, this small group is strategic in all saving activity, whether it be positive or negative. The share of saving done by those receiving an income of £2,000 per annum or more is even more striking. Percentage distributions of quantities that can be either positive or negative are often misleading. This is why we give the shares separately for those who saved positively and those who saved negatively on balance.

Corresponding data for consumers in the United States, i.e. shares of positive and negative saving by income deciles for the calendar year 1950, show that the upper ten per cent of income recipients accounted for 45 per cent of positive saving and 13 per cent of negative saving.³ In Table VIII, the top ten per cent of income recipients are associated with 46.5 per cent of positive saving and 25.8 per cent of negative saving. Since the *income unit* in this country's Savings Surveys is more narrowly defined than is the *spending unit* in the American Surveys of Consumer Finances, these figures must be regarded as rough estimates for purposes of comparison.

By other classifications in Table VIII, we see that the dominant savers could also be described as those having net worth⁴ in excess of £5,000, although savings are not quite as heavily concentrated among these income units (top 2.9 per cent) as among income recipients over the level of £1,000 (top 3.5 per cent). Similarly, the self-employed and the managerial groups in the occupational classification account for shares of saving activity far in excess of their representation in the sample. These are the only occupational groups whose shares of both positive and negative saving exceed their proportions in the sample.

¹ See L. R. Klein, 'British and American Consumers—A Comparison of their Situations and Finances,' *The Bankers Magazine*, March 1955, p. 241-46.

² By referring to Table IV, the reader can see how positive and negative savers are divided in these income classes.

³ '1951 Survey of Consumer Finances, Part IV. Distribution of Consumer Saving in 1950' *Federal Reserve Bulletin*, Vol. 37, September 1951, Table 8, p. 1067.

⁴ See the article by T. P. Hill, *BULLETIN*, this issue, p. 146, for a definition of net worth.

TABLE VIII

Shares of Saving by Classes of Gross Income, Net Worth and Occupation
Saving Survey 1953
(percentage distributions)

	Shares of net positive saving	Shares of net negative saving	Per cent of Income Units
Gross Income (£)			
0— 99	0.4	4.8	5.4
100— 199	3.1	10.7	17.3
200— 299	4.3	7.1	13.7
300— 399	10.7	9.6	17.0
400— 499	9.9	14.9	16.5
500— 599	14.5	14.3	12.2
600— 699	10.6	12.7	7.8
700— 799	4.3	6.5	2.9
800— 999	8.3	6.9	3.9
1,000—1,499	10.4	6.5	2.1
1,500—1,999	5.0	2.8	0.5
2,000 and over	18.5	3.1	0.9
Net Worth (£)			
Negative	5.6	13.1	12.4
Nil	5.0	1.7	22.2
1— 49	7.6	7.7	17.2
50— 99	4.0	5.8	6.1
100— 199	6.0	8.5	7.4
200— 399	6.6	8.0	6.8
400— 599	4.6	3.6	3.5
600— 999	7.7	7.0	4.8
1,000—1,999	10.1	15.1	7.1
2,000—4,999	10.6	16.8	7.0
5,000 and over	23.5	10.4	2.9
Not ascertained	8.6	2.1	2.7
Occupation			
Self-employed	26.9	7.0	4.4
Managers and technical	20.8	17.4	7.3
Clerical and sales	11.8	14.9	13.9
Skilled, manual	27.0	30.8	34.7
Unskilled, manual	8.5	9.4	17.0
Retired and unoccupied	5.0	20.5	22.8

TYPES OF SAVING

Contractual saving

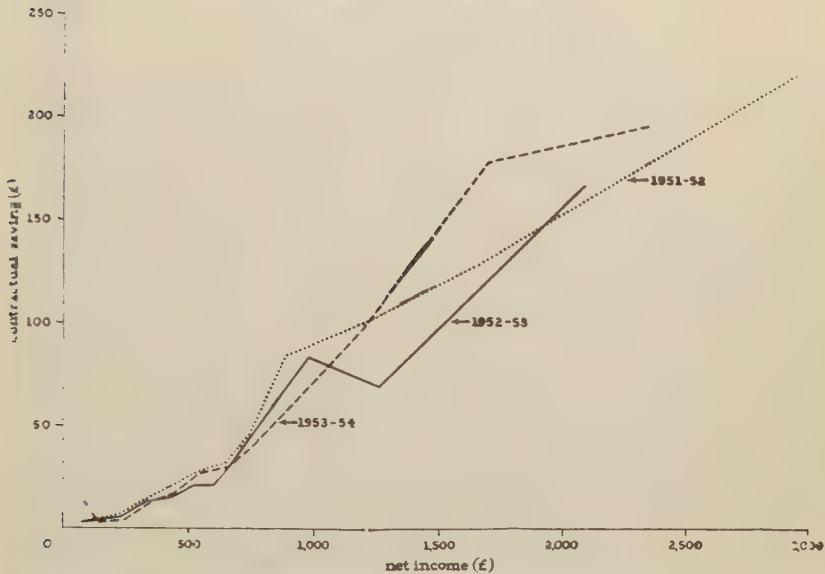
Contractual saving, as defined earlier, consists of premium payments on life assurance, superannuation, and repayment of mortgage debt. Although in principle it would seem preferable to include only payments on existing contracts, in practice we include payments on new contracts undertaken during the financial year preceding the interview.

Contractual saving differs from other types of saving in that it contains only positive elements. An increase in mortgage indebtedness or the receipt of a life assurance benefit in lump sum is counted as negative saving in our definitions but not included as a part of contractual saving.¹ The receipt of an annuity is treated as income and not as negative saving. An important feature of the total propensity to save, the relation between total saving and

¹ If this lump sum is transferred into other consumer assets, say liquid assets, there is no dis-saving on balance.

income, is that at moderately low income levels saving is negative (see Fig. 1). The propensity to save contractually is well represented by a straight line emanating from the joint origin of the saving-income axes, except for some slight tendencies towards curvature in the low income classes. This implies,

FIGURE 2
The Relationship between Contractual Savings and Net Income from Three Samples



on the average, a constant ratio between contractual saving and income for all income classes. There is dispersion about this average relationship, and of course there are a few income units in each income class who have no contractual saving, but the proportion of such cases falls from about 60 per cent in the lowest classes to about 12 per cent in the highest. There are even some classes below the highest (the income range £600-800) where there are as few as 7 per cent with no contractual saving.

We can, therefore, take account of the influence of income on contractual saving in our tabulations by distributing the percentage of income saved contractually over classes of other influential variables. In this way we can study three variables simultaneously in two dimensional tabulations. The more important of these are given in Table IX.

The ratio between contractual saving and gross income assumes a modal and median value at a point under 5 per cent. Average contractual saving during 1952-53 was £17 per income unit for the whole sample. Excluding the 24.5 per cent who did not save in this form, we find a mean of £23. The ratios of these mean values to average gross income are 0.039 and 0.053 respectively. The corresponding ratios to net income are 0.043 and 0.059.¹

¹ For mean values of each type of saving discussed in this section and their relation to each other see the article by T. P. Hill, *BULLETIN*, this issue, p. 138.

TABLE IX

Distribution of the Ratio between Contractual Saving and Gross Income by Age, Occupation and Housing Status

Savings Survey 1953
(percentages of income units)

	Contractual saving as per cent of gross income					
	Nil	0.1-5.0	5.1-10.0	10.1-20.0	20.1 and over	mean gross income (£)
Age						
18-24	56.1	38.2	3.4	2.3	—	269
25-34	14.1	60.9	17.8	6.1	1.1	482
35-44	8.1	55.2	25.1	9.5	2.2	574
45-54	12.1	54.9	24.0	7.2	1.8	560
55-64	22.6	48.5	20.2	6.7	2.1	409
65 and over	46.6	40.3	7.6	4.5	0.9	240
Occupation						
Self-employed	20.1	38.1	19.6	15.3	6.9	844
Managers and technical	9.9	31.9	34.1	21.7	2.3	977
Clerical and sales	25.6	41.9	23.0	8.9	0.7	403
Skilled manual	13.8	64.4	17.1	3.8	0.9	466
Unskilled manual	25.9	55.8	14.6	2.8	0.9	377
Retired and unoccupied	44.9	38.9	9.6	4.8	1.7	195
Housing Status						
Owens outright	37.2	43.3	15.3	3.9	0.4	617
Owens with mortgage	1.9	18.5	37.1	33.8	8.7	631
Rents council house	12.6	69.6	16.3	1.5	—	456
Rents other unfurnished accommodation	18.6	61.2	16.0	3.5	0.7	404
Rents furnished accommodation	12.9	68.9	16.3	—	1.9	547
Rent free	32.0	38.2	18.6	6.4	4.8	466
Secondary income unit	45.4	39.2	11.5	3.5	0.3	280
All groups	24.6	50.5	17.1	6.3	1.4	434

As can be seen from Table IX, the percentage of income saved contractually is concentrated at low values for young people, rises on the average for the ages 35-44 and then falls again through the age scale. Younger people are frequently single person income units and secondary units, who are not likely to have many insurable risks or mortgaged real estate. In a subsidiary table (X below), we see that mean contractual saving is much smaller for single person than multi-person income units. With marriage, the need for life assurance and mortgage capital begins to take effect. Income units with children under 18 years of age, essentially those with 3 or more persons, have still greater needs in this respect and average contractual saving rises by another major step from 2 person to 3 or more person units.

The occupational distribution of the ratio between contractual saving and income reflects the effect of age in that many retired and unoccupied persons have little or no contractual savings. Self-employed income units show a large percentage with no contractual saving, for which a possible explanation is that 97 per cent are not covered by superannuation schemes. Home ownership is relatively more frequent among self-employed and managerial income units, thus accounting for some of the large values of the ratio dis-

TABLE X
Mean Contractual Saving by Size of Income Unit
Saving Survey 1953

<i>No. of persons</i>	<i>Mean Contractual Saving (£)</i>
1	6
2	18
3	28
4	27
5	27
6 and over	25
Total	17

tributed in these two occupational categories. In fact, the lower panel of Table IX shows how strong the effect of home ownership with mortgage is on the contractual saving ratio.

The three types of contractual saving show similar patterns in relationship to the main explanatory factors. They all rise, on the average, with income and are nil or very small at the lowest income levels. The distribution of nil cases for each type is, however, interesting in a particular manner. Life assurance premiums are paid most frequently in the income classes between £400-700 per annum. A large number of these are small annual premiums, amounting to less than £10 or £20. Industrial policies account for many of these. Superannuation occurs less frequently at the highest income levels, but this can be explained in terms of the occupational distribution of superannuation (Table XIII). The self-employed receive high income but infrequently have superannuation. The proportion of nil payments on mortgage principal falls throughout the income scale and then rises in the two highest income brackets. In these classes, homes tend to be more frequently owned outright, without mortgage.

The age class 35-44 years seems to be at the peak of each kind of contractual payment, although in the case of superannuation the distribution in this age class is hardly different from that in the next higher class. Superannuation is subject to special factors such as a person's occupation and industry of employment, certain industries or occupations being better covered than others by pension schemes. The details of these facts are self-explanatory in Tables XI-XIII.

Change in liquid assets

Total saving less that part due to contractual obligation may be called discretionary saving, by contrast. As we have seen, there are many ways of saving, but the ordinary view probably associates saving with increasing one's bank balance and dis-saving with decreasing one's bank balance. These would be exemplary forms of discretionary saving. Going beyond the narrowest concept of a bank balance, we measure that component of saving called change in liquid assets by computing balance sheet changes in holdings of Post Office Savings Bank Deposits, Trustee Savings Bank Deposits, Savings Certificates, Defence Bonds, Other Savings Bank Deposits, Co-operative Society Shares, Building Society Shares and Deposits, and Ordinary Bank Accounts. In recent years, respondents in the Surveys have reported negative

TABLE XI
Types of Contractual Saving by Classes of Gross Income
Saving Survey, 1953
(percentages of income units)

		Gross Income (£)											
		0-99	100-199	200-299	300-399	400-499	500-599	600-699	700-799	800-999	1,000-1,499	1,500-1,999	2,000 & over
Life assurance													
premiaries (£)													
Nil	...	59.8	47.0	43.6	25.5	16.5	14.3	19.3	22.5	20.5	24.6	37.2	16.4
1-9	...	37.0	45.4	42.0	42.9	38.4	31.2	32.7	27.5	28.5	16.1	5.1	8.2
10-19	...	1.6	6.5	10.7	22.4	32.3	31.5	32.2	21.8	14.7	8.2	2.6	4.5
20-29	...	...	0.6	2.0	6.3	9.3	12.7	4.8	12.7	9.4	5.9	19.2	4.5
30-39	...	...	0.5	0.6	1.4	1.8	7.2	6.6	9.6	7.5	14.1	10.3	1.5
40-49	...	...	...	0.5	0.1	0.7	1.7	1.3	3.5	10.1	7.2	2.6	4.5
50-99	...	1.7	...	0.5	0.9	0.3	1.4	3.0	1.9	9.0	13.9	7.7	30.7
100 and over	...	...	...	...	0.4	0.5	0.1	0.2	0.5	0.4	10.2	15.4	29.9
Not ascertained	...	...	...	...	...	0.5	...	...	...	...	...	...	...
Mean (£)	...	3	3	5	8	10	13	12	14	19	38	42	98
Superannuation													
(£)													
Nil	...	98.6	99.1	91.4	78.1	73.3	69.8	66.0	57.3	51.8	50.5	84.6	64.9
1-9	...	1.4	0.9	2.9	9.7	11.1	12.4	12.5	11.3	3.0	0.7	...	...
10-19	...	...	...	4.1	9.8	7.4	9.1	8.3	3.5	9.4	0.7	2.6	...
20-29	...	...	...	1.1	2.3	7.2	7.2	6.1	12.2	11.2	14.1	5.1	3.0
30-39	...	...	...	0.5	...	0.5	0.9	6.1	13.2	12.6	8.5	...	1.5
40-49	...	...	...	...	0.1	0.5	0.6	1.1	2.6	3.3	10.5	...	1.5
50-99	...	...	...	...	...	...	...	...	...	6.8	14.4	2.6	17.2
100 and over	...	...	...	...	...	...	...	...	...	1.9	0.7	5.1	11.9
Mean (£)	...	0	0	1	2	3	4	6	10	15	21	10	34
Mortgage repayment													
(£)													
Nil	...	99.8	95.9	96.0	91.4	92.2	87.5	84.5	77.0	72.0	66.9	82.1	79.1
1-9	...	...	...	0.5	0.9	0.5	0.6	1.9	2.6	...	...	...	...
10-19	...	...	0.9	1.1	2.2	3.6	3.2	4.8	5.6	2.6	0.7	...	...
20-29	...	...	1.3	1.6	1.8	3.2	2.1	4.0	0.5	3.9	1.3	...	1.5
30-39	...	...	0.9	0.5	2.4	0.5	2.6	1.3	5.2	6.1	0.7	5.1	...
40-49	...	0.3	0.5	0.1	0.4	...	1.2	1.3	3.5	3.0	4.9	...	...
50-99	...	...	0.4	0.1	1.0	...	2.8	2.1	3.1	7.9	13.1	5.2	...
100 and over	...	...	...	...	...	...	...	0.2	2.6	4.6	12.5	7.7	19.4
Mean (£)	...	0	1	1	2	2	4	5	9	15	26	19	38

TABLE XII
Types of Contractual Saving by Age Classes
Saving Survey, 1953
(percentages of income units)

	Age of income unit head (years)						All age groups
	18-24	25-34	35-44	45-54	55-64	65 and over	
Life assurance premiums (£)							
Nil ...	65.5	23.3	15.4	18.0	24.4	45.8	29.9
1-9 ...	29.0	36.5	34.5	35.1	46.1	44.3	37.8
10-19 ...	4.5	25.3	27.4	26.9	20.9	7.0	19.5
20-29 ...	0.9	8.1	9.4	8.7	4.5	1.4	5.9
30-39 ...	—	5.1	4.7	4.3	2.1	0.6	3.0
40-49 ...	0.1	0.4	2.9	2.2	0.6	0.2	1.2
50-99 ...	—	0.8	4.4	3.1	0.7	0.8	1.8
100 and over	—	0.6	1.4	1.3	0.8	—	0.8
Not ascertained	—	—	—	0.4	—	—	0.1
Mean (£)	2	11	16	15	8	4	10
Superannuation (£)							
Nil ...	80.9	73.0	71.1	70.9	83.4	99.1	79.7
1-9 ...	12.0	10.4	7.9	8.3	5.4	0.4	7.0
10-19 ...	3.7	6.9	7.7	9.0	6.6	0.1	5.7
20-29 ...	2.8	6.4	6.4	5.7	2.6	0.4	4.2
30-39 ...	0.7	1.9	3.4	3.3	0.9	—	1.8
40-49 ...	—	0.6	1.2	1.4	0.7	—	0.7
50-99 ...	—	0.4	1.9	1.2	0.3	—	0.7
100 and over	—	0.5	0.4	0.3	—	—	0.2
Mean (£)	2	4	6	6	3	0	4
Mortgage Repayment (£)							
Nil ...	99.3	90.9	82.7	86.7	92.4	95.7	90.5
1-9 ...	0.7	0.4	1.1	1.2	—	—	0.6
10-19 ...	—	2.6	4.5	3.1	1.1	1.2	2.3
20-29 ...	—	1.7	2.7	3.5	0.8	2.3	2.0
30-39 ...	—	2.1	1.7	2.0	2.6	0.8	1.6
40-49 ...	—	0.9	1.4	1.5	0.2	0.1	0.8
50-99 ...	—	1.3	3.7	1.2	2.3	0.1	1.5
100 and over	—	0.2	2.2	0.9	0.8	—	0.7
Mean (£)	0	3	8	5	4	1	4

amounts of liquid asset change (i.e. stocks have been falling), but these decreases have been getting smaller.

Among liquid assets, an interesting sub-group is National Saving. About one-half the income units hold some form of National Saving. The amounts held by self-employed and managers are large compared to the holdings of others. Similarly, the size of holdings rises markedly with income. As shown in Table XIV the relationship of change in National Saving to income is highly irregular. In the lowest groups, the change is negative, and in the highest group positive. In between we find many irregularities, but in the case of age the change in National Saving follows, for the most part, the usual pattern of saving, first rising and then falling. In each age group the average change is negative and, with the exception of the lowest age class, where there are many with zero change, reaches a peak in the middle age classes 35-54 years. Perhaps this category of saving is too finely divided, at least for our sample, to yield regular and reliable patterns because of the substitutability among types of saving.

TABLE XIII
Superannuation by Occupational and Industrial Groups
Saving Survey 1953
(percentages of income units)

	Superannuation (£)							100 and over	Mean (£)
	Nil	1-9	10-19	20-29	30-39	40-49	50-99		
Occupation									
Self-employed ...	97.2	—	0.3	0.3	0.3	—	0.3	1.5	3
Managers and technical ...	43.8	2.7	4.7	17.2	16.7	4.7	9.3	0.9	20
Clerical and sales ...	69.1	7.3	11.7	7.3	2.4	1.4	0.1	0.6	6
Skilled, manual ...	72.3	13.2	8.3	5.1	0.7	0.4	—	—	3
Unskilled, manual ...	88.2	6.1	4.9	0.9	—	—	—	—	1
Retired and unoccup.	98.9	1.0	—	—	0.1	—	0.1	—	0
Industry									
Manufacturing—metal	74.8	7.8	8.9	6.1	0.9	0.1	1.3	0.1	5 ¹
Manufacturing—other	76.0	8.3	9.5	3.5	0.1	1.3	0.6	0.7	5 ¹
Building ...	94.9	2.7	0.5	0.5	—	1.4	—	—	1 ¹
Mining...	29.4	64.6	—	—	1.9	4.1	—	—	6 ¹
Transport and com- munications ...	77.4	7.5	7.4	4.9	0.2	1.4	1.2	—	9 ¹
Gas, water, and elec- tricity ...	44.4	21.6	15.7	14.4	1.3	—	2.6	—	9 ¹
Distribution ...	73.3	7.3	9.6	6.1	3.3	—	0.2	0.2	5 ¹
Professional, financial and other services...	66.8	1.4	8.0	11.1	10.3	1.1	1.2	—	9 ¹
Public admin. and de- fence ...	61.1	5.8	13.3	11.9	4.1	0.5	3.0	0.2	9 ¹

¹ Approximate values, calculated from grouped data.

The change in liquid assets, which encompasses more than National Saving, shows a similar degree of irregularity in relation to income.

As for age, the change in total liquid assets does not follow a pattern as uniform as that for the change in National Saving. The youngest age group added to liquid assets, but all others reported a reduction of their holdings. The age group 55-64 reported a very small reduction with an average of only -£1. The group 65 years and over did not reduce holdings more than some younger groups. Thus we find this semi-residual, but important, component of saving not to be systematically related to major variables of analysis in this 1953 Survey sample.

Business saving

As a type of saving business saving has its distinctive characteristics, and as a type of saver business-men have their peculiarities. The type of saving and type of saver cannot, however, be disentangled for a proper study of saving behaviour.

By businessmen, we here mean the entire self-employed occupational group including farmers, people in professions, shopkeepers, craftsmen, and others. Their main distinctive feature is that they work for themselves and usually own productive assets whose maintenance and expansion are under their entrepreneurial control. We have already made the point that the self-employed have a larger share of the saving flow than do most other occupa-

TABLE XIV
Distribution of Changes in Liquid Assets and National Saving by Classes of Gross Income
Saving Survey, 1953
 (percentages of income units)

	0-99	100-199	200-299	300-399	400-499	500-599	600-699	700-799	800-999	1,000-1,499	1,500-1,999	2,000 & over
Change in liquid assets (£)												
Positive:												
100 and over ...	—	1.3	1.8	0.2	2.0	2.8	4.2	7.0	3.2	12.8	5.1	47.8
20-99 ...	1.4	2.6	7.2	7.9	8.1	13.0	15.8	12.9	18.9	14.4	7.7	4.5
±19 ...	79.5	79.4	75.1	77.7	72.3	63.3	54.2	51.2	38.3	33.8	52.6	25.4
Negative:												
20-99 ...	10.4	11.4	10.5	10.2	9.8	9.4	15.3	19.0	21.0	9.5	5.1	3.0
100 and over ...	6.8	3.5	3.9	2.5	5.8	10.6	10.3	5.4	11.5	22.6	26.9	16.4
N.A. ...	1.9	2.0	1.6	1.5	2.0	0.9	0.2	4.5	7.2	6.9	2.6	3.0
Mean (£) ...	-22	-6	-4	-11	-13	-25	-25	+10	-92	-66	-165	+217
Change in National Saving (£)												
Positive:												
50 and over ...	—	1.8	2.5	2.9	4.3	5.3	10.2	10.6	14.7	13.8	2.6	31.3
20-49 ...	—	1.5	4.4	2.4	2.5	3.9	6.7	4.9	7.2	2.0	2.6	3.0
±19 ...	89.1	86.6	83.7	85.7	79.6	74.5	62.8	70.9	58.9	62.3	82.1	53.8
Negative:												
20-49 ...	6.9	3.3	4.3	3.8	5.5	5.9	4.3	2.6	5.2	2.6	—	3.0
50 and over ...	3.8	6.0	4.5	3.9	6.9	9.4	16.0	7.0	11.4	14.4	12.8	9.0
N.A. ...	0.3	1.0	0.7	1.4	1.2	0.8	—	4.0	2.6	4.9	—	—
Mean (£) ...	-5	-6	+2	-6	-5	-21	-20	+20	0	3	-15	+28

tional groups. It may be thought that the self-employed are high savers simply because they have high incomes. In Table XV, it can be seen that in most income groups self-employed tend to save more than do other income units.

A major explanation of the high propensity to save among businessmen would seem to be the need, on their part, for retained business earnings to be used for capital outlays and a multiplicity of opportunities for investment. Businessmen do have larger amounts of liquid assets and tend to have a different age distribution than do non-business income units. These facts

TABLE XV
*Mean Saving by Classes of Net Income, Self-employed and Non Self-employed
Occupation Groups¹
Saving Survey, 1953*
(£)

Net Income	Non Self-employed	Self-employed
0—99	—13	—415
100—199	—10	—35
200—299	—4	38
300—399	0	43
400—499	—8	27
500—599	9	—55
600—799	—18	165
800—999	29	182
1,000 and over	107	437

¹ The data in this table were taken from a sub sample used for some studies of many variables treated simultaneously; hence cases in which any of these variables were not ascertained were excluded.

could account for some of the observed differences. For example, the fact that some businessmen in low income groups have large liquid asset holdings enables them to dis-save by large amounts and may explain the lower figures for their saving in the two bottom income classes. Very young and very old retired income units are not in the entrepreneurial class; the high-saving middle-age groups are more likely to be businessmen.

TABLE XVI
*Distributions of Past and Expected Income Change by Occupational Classes
Saving Survey, 1953*
(percentages of income units)

	Self-employed	Managers and technical	Clerical and sales	Skilled manual	Unskilled manual	Retired and unoccupied
Past income change (%)						
<i>Positive</i>						
25 and over	11.2	3.7	7.3	6.4	7.5	1.9
5—24	14.8	34.4	32.4	24.4	17.0	22.5
±4	35.9	48.3	49.1	53.2	52.7	56.5
<i>Negative</i>						
5—24	17.2	6.6	5.3	9.1	11.5	4.6
25 and over	2.2	2.2	0.7	1.7	3.6	8.5
N.A.	18.7	4.8	5.3	5.1	7.8	5.9
Expected income change						
Increase	30.3	35.7	32.7	20.7	14.7	6.2
No change	37.7	50.2	55.4	59.7	67.5	76.7
Decrease	22.7	8.3	5.5	8.3	7.2	7.6
N.A.	9.4	5.8	6.4	11.3	10.6	9.5

Another possible reason for a high saving-income relation among self-employed is the comparatively great variability of their income. In Table VII, we pointed out the differences in saving for those 'temporarily' and those 'permanently' experiencing an income decline. The self-employed group has more unstable income and more unstable income expectations than the other groups.

In the national income accounts, retained earnings by companies are considered not to be part of personal savings or personal disposable income. If we treated the retention of business income by self-employed in our sample as national income accountants treat company saving, by subtracting our estimates of retained earnings from total savings and net incomes, we would have corresponding estimates of 'personal' saving and 'personal' net income for self-employed income units. These estimates are tabulated below.

TABLE XVII
'Personal' Saving and 'Personal' Income, Self-employed Income Units¹
Saving Survey, 1953
(£)

<i>'Personal' Net Income</i>	<i>'Personal' Saving</i>
0—99	—194
100—199	—60
200—299	—31
300—399	—12
400—499	—26
500—599	—54
600—799	16
800—999	162
1,000 and over	277

¹ The data in this table are from the same sample of self-employed income units used in Table XV.

By comparison with Table XV and from graphs in Fig. 3 below, it can be seen that ploughing back earnings into the business accounts in some part for the different saving propensities between self-employed and other income units, but it is not a full explanation.¹

Retained earnings of self-employed income units are the major sources of business saving as this item is measured in the Saving Survey.² In addition to retained earnings, there are various asset transfers between personal and business accounts which are used to calculate business saving in the Surveys of 1952 and 1953. The pattern of retained earnings in relation to net business profits is given in Table XVIII. This relationship is plotted in Fig. 4. If age were also taken into account, we would find a tendency for the level and slope of this relation to fall as entrepreneurs grow older.

¹ From data on business and non-business respondents in Surveys of Consumer Finances in the U.S.A., it appears that retention of earnings is more important in accounting for discrepancies in saving propensities. See L. R. Klein and J. Margolis, 'Statistical Studies of Unincorporated Business', *The Review of Economics and Statistics*, Vol. XXXVII, 1954, pp. 33-46.

² The mean retained earnings of the sample of self-employed income units used in Table XVIII are £103. All self-employed income units of the 1953 Survey showed a mean total saving of £129.

FIGURE 3
Savings-Income Relations. Savings Survey 1953

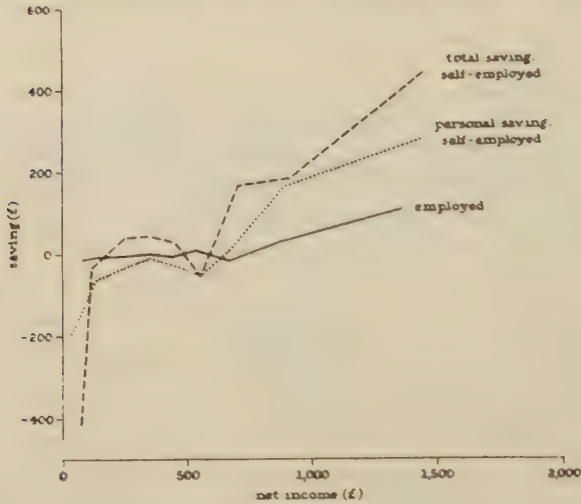
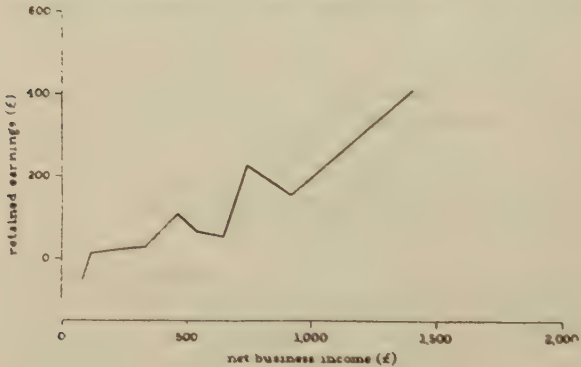


FIGURE 4
The Relationship between Retained Earnings and Net Business Income. Saving Survey 1953



Other saving

The types of saving discussed so far cover components with some special economic or institutional significance. To complete the picture of savings, we must look at the residual component, after having extracted liquid asset change, contractual saving, and business saving. This residual is composed, first of all, of changes in debt other than mortgage repayment, which is part of contractual saving. Among types of indebtedness, changes in hire purchase commitments outstanding would seem to be of some particular significance.

TABLE XVIII

Retained Earnings by Classes of Net Business Income, Self-Employed Income Units¹
Saving Survey, 1953
 (£)

<i>Net Business Income</i>	<i>Retained Earnings</i>
0—99	—53
100—199	11
200—299	25
300—399	28
400—499	110
500—599	66
600—699	54
700—799	226
800—999	156
1,000 and over	411

¹ The data in this table are from the same sample of self-employed income units used in Table XV.

A second major component of 'other saving' is net purchases and sales of stocks, shares, and other securities not included in liquid assets. Net purchases and sales show changes in amounts held by individuals. There are so few in our sample making transactions in securities that it hardly seems worthwhile to classify a separate type of saving on this account. Purchases and sales of houses and property, like stocks and shares, are also part of the residual and not a frequently occurring transaction. Improvements and additions to property held are reckoned as saving in the same way that house purchases or sales are. Finally, 'other saving' is completed by accounting for various asset transfers among individual income units in the personal sector of the economy. Gifts are entered as an item of negative saving on the books of the recipient and as positive saving on the books of the donor. Other lump sum receipts such as benefit payments from life assurance are counted as negative saving for the beneficiary.

The aggregate residual called 'other saving' is not very interesting in separate tabulations because it consists of such heterogeneous elements and has not been identical in scope for all three surveys. Some miscellaneous tabulations about components are, however, informative. Hire purchase one of the more common types of indebtedness, is seen to be most common among young income units (not the very youngest), middle income groups—just above the mean, and low liquid asset groups. These figures in Table XIX refer to outstanding amounts at the time of interview in 1953 and not to the net change during the financial year 1952–53.

Of the 4.2 per cent of income units who owned any stocks, shares or other non-British government securities most of them were in more mature age groups and either managerial, self-employed or retired. They tended to be largely concentrated at income and liquid asset levels above £1,000. In the lowest income group there were a few owners who sold shares, and these may have been for the purpose of supplementing income. In the highest income group we find relatively many buyers. Buying and selling decisions depend closely on price developments, yet during 1952–53 the pattern of

TABLE XIX

*Percentage of Income Units with Hire Purchase Outstanding and Mean Amounts Owed by Classes of Age, Gross Income, and Liquid Assets
Saving Survey 1953*

<i>Age (years)</i>	<i>% with hire pur- chase</i>	<i>Mean¹ amount (£)</i>	<i>Gross income (£)</i>	<i>% with hire pur- chase</i>	<i>Mean¹ amount (£)</i>	<i>Liquid assets (£)</i>	<i>% with hire pur- chase</i>	<i>Mean¹ amount (£)</i>
18-24	13.1	23	0- 99	3.3	4	Nil	21.5	23
25-34	33.8	27	100- 199	6.3	12	1- 49	29.7	30
35-44	29.3	31	200- 299	14.7	14	50- 99	29.2	34
45-54	24.7	28	300- 399	17.7	22	100- 199	14.0	29
55-64	14.9	20	400- 499	35.0	27	200- 399	13.4	30
65 and over	6.7	22	500- 599	32.8	29	400- 599	6.4	31
All ages	21.2	27	600- 699	34.6	39	600- 799	7.0	16
			700- 799	30.5	35	800- 999	12.5	16
			800- 999	27.4	36	1,000-1,499	7.0	7
			1,000-1,499	15.7	31	1,500-1,999	0.0	0
			1,499-1,999	19.2	33	2,000 and over	4.9	29
			2,000 and over	7.5	162			

¹ Mean of those income units with some hire purchase debt.

buying and selling decisions closely resembles ordinary saving patterns over the income range.

Among all income units 10.7 per cent received lump sum cash payments in the form of legacy, gift, insurance benefit, pension fund benefit, football pool winnings, sweepstake winnings or post-war credits and other assorted payments. Their average receipt amounted to £186 ; hence this is an item to be carefully considered in the estimation of net saving. The distribution by income groups is interesting, for it shows a substantial positive correlation.

SOME ASPECTS OF CONSUMER CHOICE

The Saving Surveys give only an incomplete picture of the consumer's entire budget, but there are enough data on types of saving and expenditures to permit us to examine, at the level of first approximation, the degree of substitutability of alternative items. Do large expenditures imply small saving; does large saving of one type imply small saving of another type? If consumers are 'forced' to save in some particular forms will they compensate by saving less in some other forms?

Superannuation schemes are, in a sense, 'forced' on many employees. If they find the occupation or industry of their choice covered by such schemes they must agree to deduction of payments at the wage source. In Table XXII we show the saving-income distribution for those contributing and those not contributing to superannuation or pension schemes. At a given income level, there is, in most cases, a definite tendency for covered persons to save more than others. In many cases this is strongly evidenced by the presence of fewer dis-savers among those contributing to superannuation or pension schemes. Although it cannot be seen precisely in the table, we can say that there are practically no *zero* savers among those covered by superannuation.

TABLE XX
Percentage of Income Units Buying and Selling Securities by Classes of Gross Income
Savings Survey 1953

		0-99	100- 199	200- 299	300- 399	Gross Income (£)	600- 699	700- 799	800- 999	1,000- 1,499	1,500- 1,999	2,000- & over	All in- come classes
Security transactions	...	—	—	—	—	0.6	0.1	0.9	4.6	1.3	2.6	10.5	0.7
Bought only	...	1.4	0.7	0.1	0.1	0.1	—	—	0.4	1.3	—	7.5	0.3
Sold only	...	—	0.4	0.1	—	0.2	—	—	—	1.3	5.1	1.5	0.2
Bought and sold	...	—	—	—	—	—	—	—	—	—	—	—	—
Neither ...	...	98.6	98.9	99.8	99.9	99.1	99.9	99.1	95.1	96.1	92.3	80.6	98.8

TABLE XXI
Distribution of Lump Sum Receipts by Classes of Gross Income
Saving Survey 1953
(percentages of income units)

Lump sum receipt (£)	Gross income (£)												All income classes
	0-99	100-199	200-299	300-399	400-499	500-599	600-699	700-799	800-999	1,000-1,499	1,500-1,999	2,000 & over	
Nil	...	96.7	92.0	92.5	91.1	89.0	88.8	82.5	80.9	76.7	76.9	59.0	89.3
1-9	...	—	0.9	0.7	1.8	2.0	1.4	8.7	1.9	0.7	2.6	1.5	2.0
10-19	...	1.4	1.8	3.0	2.8	0.6	1.2	3.8	3.9	1.3	2.6	—	2.1
20-49	...	1.6	2.7	2.3	1.4	4.5	3.6	1.9	0.4	4.9	5.1	—	2.6
50-99	...	—	1.5	0.5	1.9	1.4	1.7	—	3.0	3.9	2.6	—	1.3
100-199	...	0.3	0.9	0.2	1.0	1.0	1.4	2.1	5.2	2.0	2.6	11.2	1.3
200-499	...	—	0.2	0.6	—	1.1	0.6	1.0	1.9	4.9	5.1	9.0	0.8
500-999	...	—	—	—	—	0.1	0.6	—	1.4	4.3	—	7.5	0.3
1,000 and over	...	—	0.1	0.1	—	0.3	0.6	—	1.1	1.3	2.6	12.0	0.4
N.A.	...	—	0.1	—	—	—	—	—	0.4	—	—	—	0.03

A home owner with a mortgage debt saves significantly more than one who owns outright. We already noticed this fact from the distributions in Table IV. These two groups have similar mean income and income distributions that vary irregularly, yet markedly different saving distributions. People who own outright are generally older than those with mortgage debt, and this is responsible for some of the differential. The dominance in saving by owners of mortgaged homes over non-owning groups is partly explained by income superiority.

Thus we find two types of high contractual saving associated with high total saving. A similar lack of substitutability is not found in the case of National Saving groups. If people are encouraged to purchase National Saving, in one form or another, through membership in factory, office, school, or similar groups will they save more in total, or will they tend to substitute by saving less in other forms? We find no systematic difference, by income class, in the saving distribution of members and non-members. (Table XXIII).

Aside from types of saving, the Survey questioned respondents about outlays on consumer durables. These cover a list of specific major durables (motor car, motor cycle, bicycle, refrigerator, washing machine, television, and radio) and any other expenditures for similar goods in excess of £25.¹ We observe a strong negative correlation between outlays for durables and saving (Table XXIV).

Thus far, in our analysis of saving, we have tried to show how factors outside an individual's complete control affect his saving decisions (age, occupation, family size, income, beginning liquid assets, contractual obligations, etc.). Both saving and expenditures on durables are decision variables subject to consumer choice; therefore the empirical correlation between them does not reveal, in itself, underlying economic structure. Eventually both decision variables should be explained in terms of factors outside the consumer's free choice. Nevertheless, the negative correlation in Table XXIV does show the presence of a substitution tendency between saving and durable consumption.

The choice between spending (on durables) and saving would seem to be urgent in the case of receipt of windfalls—lump sum receipts such as a legacy, gift, insurance benefit, pension fund benefit, football pool winnings, sweep-stake winnings, etc. The average amount saved by those receiving some windfall was -£29 in 1952-53, while the corresponding figure for all other income units was +£7. This differential in saving is particularly striking in view of the fact that windfalls tend to be positively associated with income. With some irregular exceptions, saving becomes larger in a negative sense as the size of windfall grows. On balance, consumers were spending their windfalls. At the same time, expenditures on durables tended to rise with receipt of windfall; therefore the spending-saving choice was, partially at least, a substitution of durables for saving.

¹ In the 1954 Survey this limit was lowered to £10.

TABLE XXII
Saving-Income Distribution for Income Units Covered and those not Covered by Pension or Superannuation Schemes
Saving Survey 1953
 (percentages of income units)

Saving (£)	0-99		100-199		Gross Income (£) 200-299		300-399		400-499		500-599	
	S.	N.S.	S.	N.S.	S.	N.S.	S.	N.S.	S.	N.S.	S.	N.S.
<i>Positive:</i>												
100 and over	...	—	—	—	—	0.6	—	—	0.3	0.9	6.1	9.2
25-99	...	—	—	3.7	45.1	6.9	30.3	19.9	26.1	18.7	50.7	21.9
±24	...	100.0	100.0	78.5	53.7	75.2	58.8	62.9	53.9	59.1	34.0	46.7
<i>Negative:</i>												
25-99	...	—	—	11.8	1.1	13.0	11.1	10.3	11.8	12.9	4.0	10.3
100 and over	...	—	—	3.5	—	2.4	—	3.4	7.7	5.6	2.4	11.0
N.A.	...	—	—	2.4	—	1.7	—	1.9	0.3	2.7	2.8	1.0
Saving (£)	600-699		700-799		Gross Income (£) 800-999		1,000-1,499		1,500-1,999		2,000 and over	
	S.	N.S.	S.	N.S.	S.	N.S.	S.	N.S.	S.	N.S.	S.	N.S.
<i>Positive:</i>												
100 and over	...	13.7	14.3	6.0	16.4	21.7	16.9	43.6	59.1	50.0	74.5	70.2
25-99	...	31.0	19.8	19.8	36.9	36.9	27.7	21.2	7.8	6.1	—	6.9
±24	...	40.6	33.9	37.4	27.5	13.4	13.9	8.6	3.9	—	8.5	2.3
<i>Negative:</i>												
25-99	...	9.9	22.3	12.1	6.2	11.6	16.2	2.7	6.5	—	—	2.3
100 and over	...	4.3	9.7	16.5	11.5	10.9	15.9	15.2	17.5	—	17.0	13.8
N.A.	...	0.5	—	8.3	1.6	5.4	9.5	8.6	5.2	16.7	—	4.6
S. = Superannuation.											N.S. = No Superannuation.	

TABLE XXIII
Saving-Income Distribution by Membership or Non-membership in National Saving Groups
Saving Survey 1953
(percentages of income units)

Saving (£)	0-99		100-199		Gross Income (£)		300-399		400-499	
	N.	M.	N.	M.	N.	M.	N.	M.	N.	M.
<i>Positive:</i>										
100 and over...	...	—	0.2	—	0.6	—	1.3	—	0.4	2.7
25-99	...	—	3.7	—	9.0	26.9	21.9	24.7	21.9	14.8
±24	...	80.2	78.9	66.7	74.1	65.2	64.3	43.5	56.3	64.5
<i>Negative:</i>										
25-99	...	9.3	11.1	33.3	12.9	—	8.4	27.9	13.4	8.5
100 and over...	...	8.5	3.6	—	2.4	—	3.0	—	6.8	3.2
N.A.	...	1.9	2.4	—	1.1	8.0	1.2	4.0	1.2	6.3
Saving (£)	500-599		600-699		Gross Income (£)		800-999		1,000 and over	
	N.	M.	N.	M.	N.	M.	N.	M.	N.	M.
<i>Positive:</i>										
100 and over...	...	9.6	14.3	12.4	11.0	15.3	19.7	18.2	55.8	59.6
25-99	...	43.4	24.1	20.9	27.7	35.7	40.9	12.5	13.7	—
±24	...	44.7	35.4	40.7	41.2	—	5.8	31.2	2.9	20.3
<i>Negative:</i>										
25-99	...	7.0	18.9	13.5	4.6	22.4	8.1	27.2	3.8	4.2
100 and over...	...	4.3	7.0	12.4	9.7	26.5	15.2	9.7	17.0	15.9
N.A.	...	0.6	0.2	—	5.8	—	10.4	1.2	6.9	—

M = Member.

N = Non-Member.

TABLE XXIV
Saving by Classes of Expenditures on Durable Goods
Saving Survey 1953
(percentages of income units)

<i>Saving (£)</i>	<i>Expenditures on durables (£)</i>				
	<i>Nil</i>	<i>1-49</i>	<i>50-99</i>	<i>100-199</i>	<i>200 & over</i>
<i>Positive:</i>					
100 and over ...	4.4	8.7	11.4	12.2	5.7
25-99 ...	17.9	24.2	10.2	9.1	10.1
±24 ...	64.3	44.2	43.2	19.1	1.2
<i>Negative:</i> ...					
25-99 ...	7.9	16.6	31.3	28.2	12.9
100 and over ...	3.4	5.0	2.7	28.9	68.1
N.A. ...	2.3	1.3	1.3	2.5	1.9
<i>Mean (£) ...</i>	<i>12</i>	<i>8</i>	<i>10</i>	<i>-18</i>	<i>-276</i>

SAVING IN THE 1954 SURVEY—PRELIMINARY FINDINGS

Except for the study of the time patterns of mean saving, saving-income relations, and saving by occupational groups¹ we have based our analysis mainly on data from the Saving Survey of 1953. Our findings are substantially supported by the Survey of 1952, but since the 1953 sample contained weaknesses² we find it useful to present some other results now available from the 1954 Survey. Tabulations are only partly completed for that study; therefore we present selected tables that agree as nearly as possible in classification with those given earlier from the 1953 Survey.

There was a much higher average level of saving during 1953-54, but patterns in many of the distributions remain similar to those in 1952-53. For example one- and two-person income units save much less than do income units of larger size in both samples, but in the 1954 Survey single-person units are at much lower average levels than two-person units. This is not true in the earlier sample. Also, the 1954 sample is somewhat irregular, on the average, since mean saving by classes of income unit size does not fall steadily for income units larger than three persons. Five-person units save large amounts in the later sample.

During 1952-53, saving was higher in the 35-44 age class than in any other. The peak during 1953-54 was reported for the older group 45-54. People 65 years of age and over are dis-savers in both samples, but to a smaller extent now than in 1952-53. The youngest age group, 18-24 years, in both samples has the second lowest saving average. The saving-income pattern, as we noted earlier, is not essentially different in any of the three Survey samples since 1952. The customary increasing dispersion of saving associated with increasing levels of income is also evident from distribution of saving at each income level in 1953-54. In classifying saving by liquid assets held at the beginning of the year, we are probably less able than in Table IV to pick out large dis-savers at (relatively) high asset levels, but it is

¹ See pp. 177-180 of this article.

² See T. P. Hill, L. R. Klein, and K. H. Straw, *BULLETIN*, Vol. 17, No. 1, February 1955, pp. 89-126.

clearly evident in Table XXV that significantly large dis-saving takes place primarily at high asset levels.

Contractual saving can again be considered, in a statistical sense, as proportional to income with the size of the proportion dependent on marital status and age. These results are shown in Table XXVI.

Like their predecessors, respondents in the 1954 Survey estimated, on balance, a decrease in their liquid assets during the course of the preceding financial year. The fact that the decrease was much less during 1953-54 than in the earlier years is reflected in the comparatively large average saving reported in the 1954 Survey. As before, moreover, we note a fair amount of irregularity in the change in liquid asset holdings or National Saving when classified by different variables. For comparison with Table XIV we show in Table XXVII these two saving components distributed by net income level.

Business saving remains in the 1954 sample as the largest average form of

TABLE XXV
Distributions of Saving by Economic and Demographic Characteristics
Saving Survey 1954
(percentages of income units)

(Percentage of income units)														
		Negative saving (£)					Positive saving (£)						Mean saving (£)	
		200& over	100-99	50-49	25-24	1-24	0	1-24	25-49	50-99	100-199	200& over	N.A.	
Net income (£)														
0- 99	...	8.4	2.2	10.2	0.8	9.4	33.7	32.9	0.4	—	—	—	2.0	-60
100- 199	...	1.2	1.2	3.3	6.4	13.6	27.6	41.9	1.7	0.7	—	—	2.3	-8
200- 299	...	0.3	1.8	5.2	7.0	11.2	14.8	43.1	10.6	4.3	0.1	—	1.6	-7
300- 399	...	0.7	1.0	3.8	7.4	15.7	11.3	37.3	13.6	3.9	3.5	0.1	1.7	5
400- 499	...	1.1	2.8	6.1	1.2	17.5	5.2	33.6	14.3	10.8	4.9	—	2.6	10
500- 599	...	3.0	1.3	6.5	7.5	12.1	3.0	22.9	16.6	17.4	4.2	1.4	4.0	10
600- 699	...	2.9	4.6	6.7	4.8	11.6	4.5	20.2	18.9	11.0	7.7	5.6	1.4	17
700- 799	...	7.3	2.2	4.7	4.9	5.5	5.9	10.7	7.7	22.7	19.4	6.1	2.8	31
800- 999	...	7.4	3.9	9.8	0.9	15.0	0.6	8.7	13.2	10.0	18.4	41.3	9	13
1,000-1,499	...	6.6	1.7	9.6	0.4	5.4	—	9.5	0.4	2.9	27.4	36.1	—	186
1,500-1,999	...	4.1	8.2	2.0	2.0	—	4.1	—	2.0	8.2	4.1	63.3	2.0	257
2,000 and over	...	4.4	—	—	—	—	—	—	—	—	22.2	68.9	4.4	707
Liquid assets beginning of year (£)														
Nil	...	0.3	0.4	2.7	3.6	8.6	27.3	41.6	11.3	2.3	0.9	0.6	0.3	7
1- 49	...	0.9	1.6	3.8	4.2	19.8	7.0	35.5	12.8	8.6	5.0	0.8	—	14
50- 99	...	1.3	2.8	4.2	8.4	13.4	2.8	33.4	12.4	8.5	9.1	2.4	1.2	14
100- 199	...	1.3	0.9	8.9	9.6	20.9	3.6	23.4	8.4	13.5	5.6	4.0	—	20
200- 399	...	2.0	6.2	10.6	6.6	11.4	2.7	21.7	14.3	13.0	7.5	3.0	1.1	11
400- 599	...	11.0	0.9	8.2	8.0	9.5	4.1	23.4	6.1	10.4	8.3	10.2	—	17
600- 799	...	10.3	4.9	22.2	6.7	8.2	3.6	14.3	10.3	8.2	9.1	2.1	—	35
800- 999	...	18.2	5.2	10.9	5.2	11.5	0.5	30.2	6.8	3.1	1.0	7.3	—	88
1,000-1,499	...	12.8	1.7	5.6	3.0	13.2	9.4	5.1	1.3	20.1	15.8	11.5	0.4	17
1,500-1,999	...	13.5	18.0	12.6	0.9	0.9	0.9	1.8	—	29.7	3.6	18.0	—	7
2,000 and over	...	4.8	7.7	5.3	1.4	1.0	1.9	1.0	14.4	17.7	21.0	23.0	1.0	129
Occupation														
Self-employed	...	4.9	2.3	7.0	7.5	6.2	4.7	17.2	8.7	5.7	15.3	19.7	0.9	79
Managers and technl.	...	5.8	2.3	8.6	3.4	4.6	3.2	11.0	14.2	16.6	18.4	7.2	4.7	40
Clerical and sales	...	4.5	2.5	6.5	5.3	13.5	14.0	23.7	11.8	10.5	3.1	2.3	2.3	—4
Skilled manual	...	1.4	1.3	4.3	4.6	15.0	7.7	34.3	13.6	10.6	4.1	0.9	2.2	12
Unskilled manual	...	—	0.8	2.9	5.8	15.3	13.8	46.5	11.1	2.7	0.2	0.1	0.7	4
Retired and un-occupied	...	2.3	3.6	7.2	5.7	13.8	23.4	33.8	4.3	1.6	0.6	0.5	3.1	-15
Age														
18-24	...	0.2	0.4	4.2	3.6	10.6	27.7	32.1	12.2	4.6	3.2	0.2	1.1	8
25-34	...	3.3	2.3	5.8	4.7	11.6	8.7	27.9	9.5	13.0	6.1	4.2	2.9	18
35-44	...	4.1	3.2	5.7	5.8	15.0	4.0	25.0	13.6	10.3	8.1	4.3	0.8	14
45-54	...	2.2	1.6	5.8	5.2	13.6	3.2	33.8	13.8	10.3	5.5	3.1	2.0	19
55-64	...	2.9	2.2	3.5	5.6	10.5	11.2	36.8	11.6	5.8	3.4	3.9	2.6	14
65 and over	...	1.3	2.1	7.1	5.6	14.8	22.3	32.5	4.9	2.1	2.4	0.7	4.2	-7
Number in income unit														
1	...	2.0	1.0	3.6	5.3	11.8	22.2	36.0	6.9	4.6	3.0	1.6	2.0	3
2	...	3.1	2.6	7.8	5.2	13.8	5.1	30.8	11.8	7.4	5.1	3.5	3.8	10
3	...	1.9	3.3	6.9	5.8	15.7	4.1	23.2	15.5	10.1	8.2	3.3	1.9	27
4	...	2.9	4.1	5.6	4.6	10.4	5.1	23.8	14.7	18.5	5.1	3.9	1.3	16
5	...	2.1	0.5	4.1	4.6	14.2	3.5	34.5	12.4	11.0	6.4	4.2	2.5	35
6 and over	...	3.4	—	6.2	6.2	15.6	11.9	33.2	15.1	3.7	0.6	4.0	—	14

TABLE XXVI

Distribution of Contractual Saving by Classes of Net Income, Size of Income Unit and Age
Saving Survey 1954

(percentages of income units)

	Nil	1-4	5-9	10-19	Contractual saving (£)					100 & over	N.A.	Mean (£)
					20-29	30-39	40-49	50-59				
Net Income (£)												
0—99	45.3	33.9	10.4	6.5	—	—	—	2.0	2.0	—	—	14
100—199	48.2	28.7	13.9	7.9	0.6	0.2	0.6	0.1	—	—	—	3
200—299	37.8	22.8	16.9	17.7	3.7	0.8	0.3	0.1	—	—	—	4
300—399	23.2	15.3	15.6	24.1	13.6	2.5	2.1	2.4	0.6	0.6	—	13
400—499	19.5	10.3	15.0	21.0	14.2	9.1	5.7	5.0	0.1	—	—	17
500—599	10.6	3.0	14.8	20.8	17.0	11.1	11.7	8.2	2.7	—	—	27
600—699	10.1	6.6	5.5	22.0	19.2	10.0	9.9	13.2	3.4	—	—	30
700—799	11.7	2.2	6.3	12.4	15.8	7.9	10.9	27.7	5.1	—	—	40
800—999	7.4	2.6	5.2	9.8	10.6	16.5	7.4	26.2	14.3	—	—	57
1,000—1,499	10.4	—	1.7	5.8	5.8	5.8	5.4	22.4	42.7	—	—	98
1,500—1,999	12.2	—	—	—	2.0	4.1	4.1	12.2	65.3	—	—	180
2,000 and over	8.9	2.2	—	26.7	—	—	—	6.7	55.6	—	—	198
Size of Income Unit												
1 ...	44.4	23.3	12.4	9.9	4.4	2.6	1.3	1.2	0.6	—	—	7
2 ...	17.4	13.1	13.5	18.7	10.8	7.3	6.8	8.1	3.9	0.4	25	25
3 ...	8.6	6.1	13.9	21.5	16.6	8.8	6.6	13.1	4.3	0.6	31	31
4 ...	6.8	4.6	10.7	29.9	12.9	6.8	9.3	11.0	7.9	0.1	41	41
5 ...	9.6	7.8	12.2	22.3	23.0	4.2	6.2	9.2	5.5	—	30	30
6 and over	19.0	3.4	15.9	20.2	16.2	9.1	6.0	5.7	4.5	—	26	26
Age												
18—24 ...	52.2	14.0	11.6	15.3	4.4	1.2	1.0	0.3	—	—	5	5
25—34 ...	19.3	9.7	13.3	18.9	13.9	7.3	5.9	8.0	3.0	0.6	24	24
35—44 ...	9.6	5.7	11.2	19.7	14.0	9.8	9.4	12.9	7.7	0.1	37	37
45—54 ...	13.6	10.0	13.6	18.7	16.1	6.9	8.2	8.2	4.2	0.5	29	29
55—64 ...	20.9	15.8	12.6	24.8	9.5	5.9	1.0	6.6	2.9	0.1	20	20
65 and over	44.3	31.3	14.2	6.8	1.0	1.0	0.5	0.9	0.1	—	4	4

saving, but this average is not nearly as dominating as in previous years. The mean value of non-zero business saving is £49, much less than the figure of £103 in the preceding year.¹ The average amount of non-zero contractual saving was only £28; hence business saving was still the largest of our major saving components. Furthermore, our sample contained a much larger proportion of self-employed in 1954. The large increase in saving for this sample is accounted for, however, by the larger figures for contractual saving and the smaller decrease in liquid asset holdings. Average contractual saving and the change in liquid assets are both higher by about £4 per income unit in the 1954 than in the 1953 Survey. The change in National Saving, an important component of the liquid asset change, is also higher in the later Survey by about this amount. All other saving types lumped together; business saving, change in non-mortgage indebtedness, change in security holdings, etc.; are about —£2 in the 1954 Survey compared with a nil figure in the previous years.² According to these data, then, the increase in personal saving seems to have been truly 'personal' and not a result of including small business saving together with other consumer finances.

¹ The figure from the 1953 Survey is taken from a subsample of all self-employed respondents exclusive of some cases not ascertained on a selected group of variables. The subsample contained 87.5 per cent of all self-employed in the sample. See Table XV.

² The nil mean amounts of 'other saving' for the 1952 and 1953 Surveys do not take into account the possible adjustments to business saving discussed above on p. 178.

TABLE XXVII
Distribution of Change in Liquid Assets and National Saving by Classes of Net Income
Saving Survey 1954
 (percentages of income units)

		0-99	100-199	200-299	300-399	400-499	500-599	600-699	700-799	800-999	1,000-1,499	1,500-2,000	2,000 & over	N.A.
Change in liquid assets (£)														
<i>Positive:</i>														
100 and over ...	...	0.4	1.1	1.2	2.2	5.4	2.2	8.5	9.9	9.5	29.9	14.3	20.0	—
20-99 ...	...	2.8	5.0	10.7	9.0	7.9	14.0	12.4	14.6	20.8	7.9	12.2	8.9	—
±19 ...	...	79.2	81.2	73.8	73.3	70.1	56.9	60.6	51.8	44.9	33.5	42.8	33.3	85.8
<i>Negative:</i>														
20-99 ...	...	7.1	7.6	10.4	12.5	9.6	14.1	10.9	15.0	8.2	10.0	4.1	2.2	7.1
100 and over ...	...	8.6	2.9	2.5	2.4	4.4	8.8	6.3	5.9	15.6	18.7	24.5	33.3	—
N.A. ...	...	2.0	2.3	1.6	0.6	2.6	4.0	1.4	2.8	0.9	—	2.0	2.2	7.1
<i>Mean (£) ...</i>	...	—15	—10	—8	—5	—3	—19	—4	—8	8	48	—87	—954	—6
Change in National Savings (£)														
<i>Positive:</i>														
50 and over ...	...	0.4	2.2	2.6	2.4	6.4	3.7	9.2	9.9	14.5	10.4	4.1	6.7	—
20-49 ...	...	0.6	3.1	4.9	6.0	6.2	6.7	7.1	4.7	6.9	4.2	6.1	4.4	—
±19 ...	...	87.7	86.9	80.5	80.8	76.8	71.2	72.9	68.3	68.0	73.9	77.6	82.2	92.9
<i>Negative:</i>														
20-49 ...	...	4.7	4.7	6.5	6.8	5.7	7.0	3.1	5.3	1.5	1.7	—	—	—
50 and over ...	...	6.7	2.5	4.5	4.1	4.0	9.4	7.6	9.3	9.1	10.0	12.2	6.7	7.1
N.A. ...	...	—	0.6	0.8	—	0.8	2.0	0.1	2.4	—	—	—	—	—
<i>Mean (£) ...</i>	...	—9	—2	—7	—4	5	—13	17	—19	16	4	—55	—18	—6

THE MEANS OF SUBSISTENCE

INCOME FROM EARNINGS AND FROM ASSISTANCE: 1935-53

By T. SCHULZ.

I. INTRODUCTORY

In this paper we intend to compare income and expenditure patterns of certain types of working-class families when the earner was employed and in receipt of average industrial earnings, and when he was out of work and, having no other sources of income, was dependent on the minimum provided by unemployment assistance.¹ The period covered will be the years from 1935 to 1953; it thus starts with the year when the Unemployment Assistance Act of 1934 came into force.² The assistance incomes have been computed from the official scale rates; the figures of earned incomes, set in juxtaposition to them, are derived from the data of average industrial earnings of men aged 21 years and over, published periodically in the *Ministry of Labour Gazette*. We shall consider the weekly incomes of small, medium, and large families, the small family typified by the family of two or three persons, the medium family by that of five persons, and the large family by the family of seven persons. In each instance it will be assumed that the husband is the sole earner, actually or potentially, and that he and his wife are the only adults in the family, all other members being dependent children.

The families dependent on earnings will hereafter be styled the earners' families, and those dependent on assistance, the assistance families.

II. GROSS AND NET INCOMES

Before the war, poverty of a family whose head was an industrial worker arose mainly from two causes: from a large number of dependent children or from the man's inability to do, or to obtain, work. Only in certain employments were the actual earnings of a man engaged in regular work very low. During the whole period surveyed the average earnings of an adult male attained fairly satisfactory levels. Even in 1935, the year of the lowest average earnings, the weekly average for all male adult industrial workers, computed by the Ministry of Labour from a sample taken in October, amounted to 64s. 6d.³—worth in terms of 1953 purchasing power, about 163s.⁴ His net

¹ Since July 5th, 1948: *National* assistance.

² By the National Assistance Act of 1948, the functions of the Unemployment Assistance Board, called into being by the Act of 1934, were somewhat modified and enlarged and its title changed into National Assistance Board. However, with respect to giving assistance to the needy unemployed its operation remained essentially the same as before.

³ *Ministry of Labour Gazette*, Vol. XLV No. 7, page 257.

⁴ The purchasing power has been calculated by means of the *London and Cambridge Economic Bulletin* indices of personal consumption, which are employed for similar conversions throughout this paper. The substitution of the Ministry of Labour index of retail prices for these indices would give nearly the same figure for 1953; for the years from 1942 to 1952, the relative purchasing power of the £ sterling appears however somewhat higher if calculated by the Ministry of Labour retail price index than if calculated by the London

[Footnote continued on following page.]

annual earnings per week would have been somewhat less by reason not only of the deductions for compulsory insurances but also of slack weeks with earnings below normal, but a conservative estimate gives a figure of 60s. 2d.¹ equivalent to 152s. in 1953.

Public assistance, of course, is always related essentially to the needs of the individual and the income of a family from this source naturally varies with the number of dependants within the family. In 1935, a husband and wife were allowed 24s. per week, while the rates for dependent children ranged from 3s. to 4s. 6d. per week. The 1953 equivalent of these rates would have been 60s. 8d., 7s. 7d., and 11s. 4d., respectively, including in each instance a 25 per cent standard rent allowance. The actual scale rates in 1953, which completely excluded the cost of housing, amounted to 59s. for husband and wife, and from 11s. to 16s. for a dependent child.²

The standard rent—or housing—allowance of 25 per cent of the basic scale rates³ was maintained as part of the assistance scale allowance until January 1944. If a family paid more than this and the outlay was considered necessary, an additional grant was made; if a family paid substantially less, a deduction from their scale allowance was prescribed by the official Regulations. Since 1944, the scale rates exclude all cost of housing, which is covered by an additional grant, usually in full.

In order to obtain figures of incomes from earnings and from assistance that are comparable, some adjustment had to be made so as to allow for the fact that while the income figures at our disposal of earners' families are meant to cover all expenditure, those of the assistance families exclude in earlier years in part, and in more recent years completely, the families' outlay on housing. For reasons set out in the Appendix we decided to employ for all our comparisons income figures excluding the cost of housing. Thus from the assistance incomes we deducted the housing allowances included in the scale rates from 1935 to 1943, while from all earners' incomes we made deductions for cost of housing in accordance with the average percentage outlay on housing—13 per cent—shown by the large sample of working-class budgets collected by the Ministry of Labour in 1937-38.⁴ We assumed this percentage to apply to the income of average earners' families in 1937, adjusting

¹ Cf. Appendix: *Gross Earnings and Earners' Net Incomes.*

² Cf. Appendix: *Assistance Incomes.*

³ Cf. Appendix: *Cost of Housing.*

⁴ *Ministry of Labour Gazette*, Vol. XLVIII, No. 12, pp. 300-305.

Footnote 4 continued from previous page:

and Cambridge consumption indices, owing to the much larger weights given in the Ministry of Labour index of retail prices to highly subsidized items of consumption. The Ministry of Labour index fell short of the personal consumption index figures by the following percentages:

	%		%		%
1936 ...	1	1942 ...	3	1948 ...	6
1937 ...	0	1943 ...	3	1949 ...	6
1938 ...	0	1944 ...	3	1950 ...	7
1939 ...	1	1945 ...	4	1951 ...	6
1940 ...	1	1946 ...	7	1952 ...	3
1941 ...	2	1947 ...	8	1953 ...	2

it for the years before and after according to the variations in the Ministry of Labour index of the cost of housing. The figures of outlay thus computed are set out in the first column of Table I. The main purpose of Table I is to give a comprehensive survey of the body of figures on which we shall base all our

TABLE I
*Spendable Incomes and Earners' Cost of Housing
Per Family per Week*

Cal- endar Year	Cost of Housing		Spendable Incomes							
	All Earners' Fami- lies		Earners' Families				Assistance Families ¹			
			2 Persons	3 Persons	5 Persons	7 Persons	2 Persons	3 Persons	5 Persons	7 Persons
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1935	8 1	52 1	52 1	52 1	52 1	52 1	18 0	21 3	26 5	30 7
1936	8 2	53 5	53 5	53 5	53 5	53 5	18 0	21 3	26 5	30 7
1937	8 2	54 9	54 9	54 9	54 9	54 9	18 0	21 3	26 5	32 0
1938	8 3	56 2	56 2	56 2	56 2	56 2	19 3	22 5	27 8	33 3
1939	8 4	61 9	61 9	61 9	61 9	61 9	19 3	22 5	27 8	33 3
1940	8 5	73 1	74 4	74 4	74 4	74 4	21 3	25 0	31 2	37 9
1941	8 5	76 4	78 7	84 6	84 6	84 6	25 3	29 2	35 11	43 0
1942	8 5	82 5	87 8	95 3	95 3	95 3	30 3	35 3	43 11	53 9
1943	8 5	89 5	95 8	105 2	105 2	105 2	30 3	35 3	43 11	53 9
1944	8 5	90 10	97 1	107 1	107 1	107 1	31 0	39 3	52 0	66 0
1945	8 5	88 7	94 10	105 4	106 8	106 8	31 0	39 3	52 0	66 0
1946	8 7	96 3	101 2	114 7	124 7	124 7	31 0	39 3	52 0	66 0
1947	8 10	103 11	109 0	120 4	130 4	130 4	31 0	40 9	58 0	76 0
1948	8 11	110 4	115 9	128 0	137 2	137 2	40 0	49 9	67 0	85 0
1949	9 0	114 10	120 10	132 9	142 9	142 9	40 0	49 9	67 0	85 0
1950	9 1	122 7	128 5	141 3	151 3	151 3	43 6	54 6	73 6	93 6
1951	9 3	132 3	139 3	153 4	163 4	163 4	43 6	54 6	73 6	93 6
1952	9 6	145 7	152 2	167 3	179 4	179 4	59 0	73 9	99 6	126 6
1953	9 11	156 8	163 2	182 2	198 2	198 2	59 0	73 9	99 6	126 6

¹ From 1935 to 1943, the following amounts have been deducted from the scale rate incomes for cost of housing: 2 persons, 6s.; 3 persons, 7s. 1d.; 5 persons, 8s. 10d.; 7 persons, 1935 and 1936, 10s. 2d.; 7 persons, 1937 to 1943, 10s. 9d. From 1944 onward the figures represent the actual scale rates.

comparisons, *i.e.*, the figures of net comes excluding the cost of housing, as defined, of earners' families and of assistance families (hereafter usually referred to as 'spendable incomes'.)¹

The first differentiation between earners' net incomes in relation to the number of dependants in the family, occurred in the financial year of 1940-41, when for a family of two persons average earnings became liable to income tax; in 1941, this liability extended to a family of three persons in the same category. Children's allowances were introduced in November 1945, amounting to 5s. per week for each dependent child except the first; these allowances were raised to 8s. in October 1952.

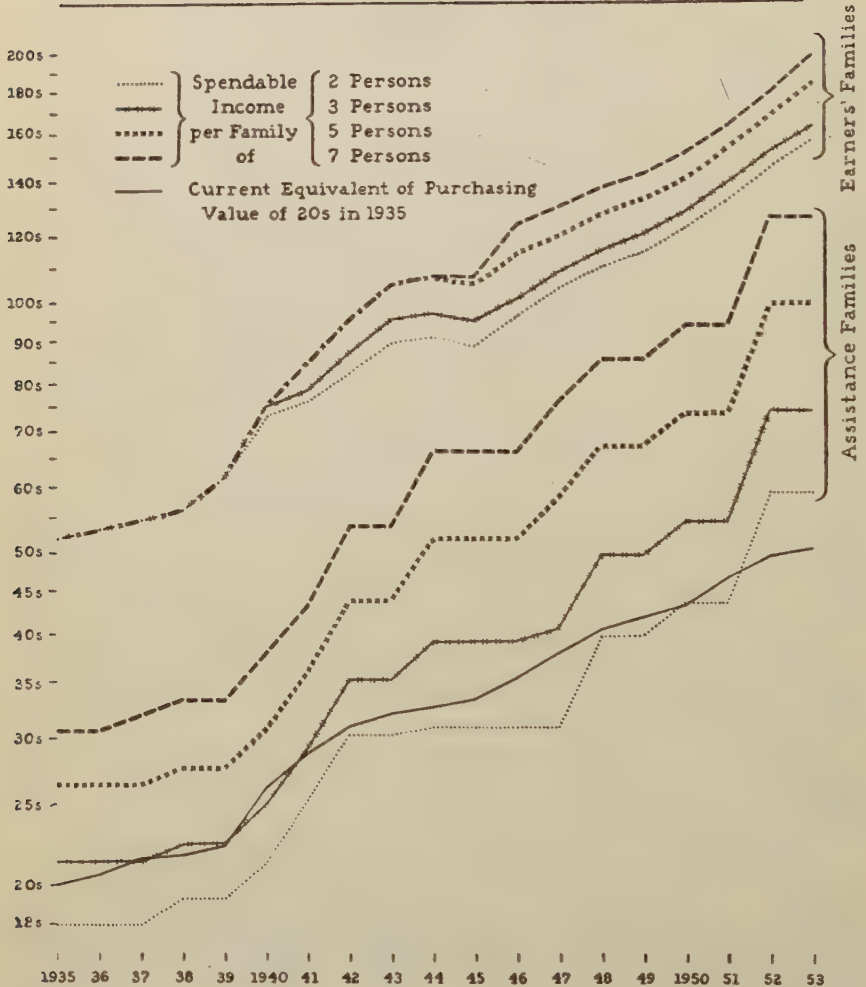
In Diagram A the income figures of Table I are represented graphically.

¹ The assistance allowances for children included in our figures of assistance incomes are the respective average scale rates for children multiplied by the number of children in the family. They include the ordinary children's allowances given to all families with more than one dependent child.

The curves thus obtained are augmented by another curve indicating the current equivalent of the purchasing value of the £ sterling in 1935, which permits of a quick estimate of the changes in real incomes accompanying the

DIAGRAM A

SPENDABLE INCOMES & PURCHASING POWER OF THE £ STERLING



corresponding changes in money incomes. The Diagram brings out the fact that the average spendable incomes of all the family types considered rose by more from 1935 to 1953 than would have been required for stabilizing their 1953 overall purchasing power. What, however, is the import of this for the individual family with an expenditure pattern that may be very different

from that of "average consumption of all consumers' goods"—the concept underlying the calculation of the purchasing power of the £ sterling. In order to approach this question we have attempted to split up our figures of spendable incomes into significant expenditure patterns, reflecting differences in incomes and in the structure of the families.

III. THE COST OF FOOD AND OF FUEL AND LIGHTING

The most elementary needs of every family are food and shelter. Since we have already excluded from our figures the cost of housing we must now consider the cost of food. The 1937-38 Ministry of Labour survey, already referred to, showed a weekly outlay on food per family of 3.8 persons—including one child under 14 years old—of 34s. 1d. From this we obtained a figure of weekly cost per Male Adult Equivalent (M.A.E.) of 10s. 7d., which we assumed to represent the average cost of food of earners' families in 1937. This figure, modified by the index of changes in the retail price of food between 1935 and 1953, we have used for all our calculations of the cost of food for earners' families. We shall refer to the figures thus computed as 'earners' food expenditure, and to the corresponding diet as the 'earners' diet'. The cost of food of assistance families we have assessed for the pre-war

TABLE II
Cost of Food. Per Family per Week

Calendar Year	Earners' Families: 1937-38 Diet				Assistance Families: 'Human Needs' Diet			
	2 Persons	3 Persons	5 Persons	7 Persons	2 Persons	3 Persons	5 Persons	7 Persons
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1935 ...	17 7	23 9	34 9	43 9	10 9	14 6	21 2	26 8
1936 ...	18 2	24 7	35 11	45 3	11 1	15 0	21 11	27 7
1937 ...	19 7	26 6	38 8	48 8	11 11	16 2	23 7	29 8
1938 ...	19 9	26 9	39 0	49 2	12 1	16 4	23 10	30 0
1939 ...	20 2	27 3	39 10	50 2	12 4	16 8	24 4	30 8
1940 ...	22 11	31 0	45 3	57 0	14 0	18 11	27 8	34 9
1941 ...	24 4	32 10	48 0	60 6	16 8	22 7	33 0	41 6
1942 ...	24 9	33 5	48 9	61 6	17 1	23 1	33 8	42 3
1943 ...	24 9	33 5	48 9	61 6	17 10	24 2	35 3	44 5
1944 ...	24 9	33 5	48 9	61 6	18 7	25 2	36 9	46 3
1945 ...	25 1	33 11	49 7	62 5	18 4	24 9	36 2	45 6
1946 ...	26 6	35 10	52 3	65 11	19 3	26 0	38 0	47 10
1947 ...	28 1	37 11	55 5	69 10	21 11	29 7	43 2	54 5
1948 ...	30 5	41 2	60 1	75 9	21 8	29 3	42 9	53 11
1949 ...	31 10	43 0	62 10	79 2	24 9	33 5	48 10	61 6
1950 ...	34 0	46 0	67 1	84 7	25 9	34 10	50 10	64 1
1951 ...	37 9	51 1	74 6	93 11	28 0	37 10	55 3	69 8
1952 ...	43 8	59 1	86 3	108 8	31 8	42 10	62 6	78 9
1953 ...	46 1	62 3	90 11	114 7	32 5	43 10	64 1	80 7

years and the first years of the war on the basis of the late Mr. S. Rowntree's 'human needs' dietary for 1936,¹ applying to his data the same price indices as employed in assessing the earners' food expenditure. From 1941 onward we have used our own figures of cost, from the bi-annual surveys of the cost of a 'human needs' diet, published in this BULLETIN. We shall term the assistance families' cost of food the 'assistance food expenditure' and the diet

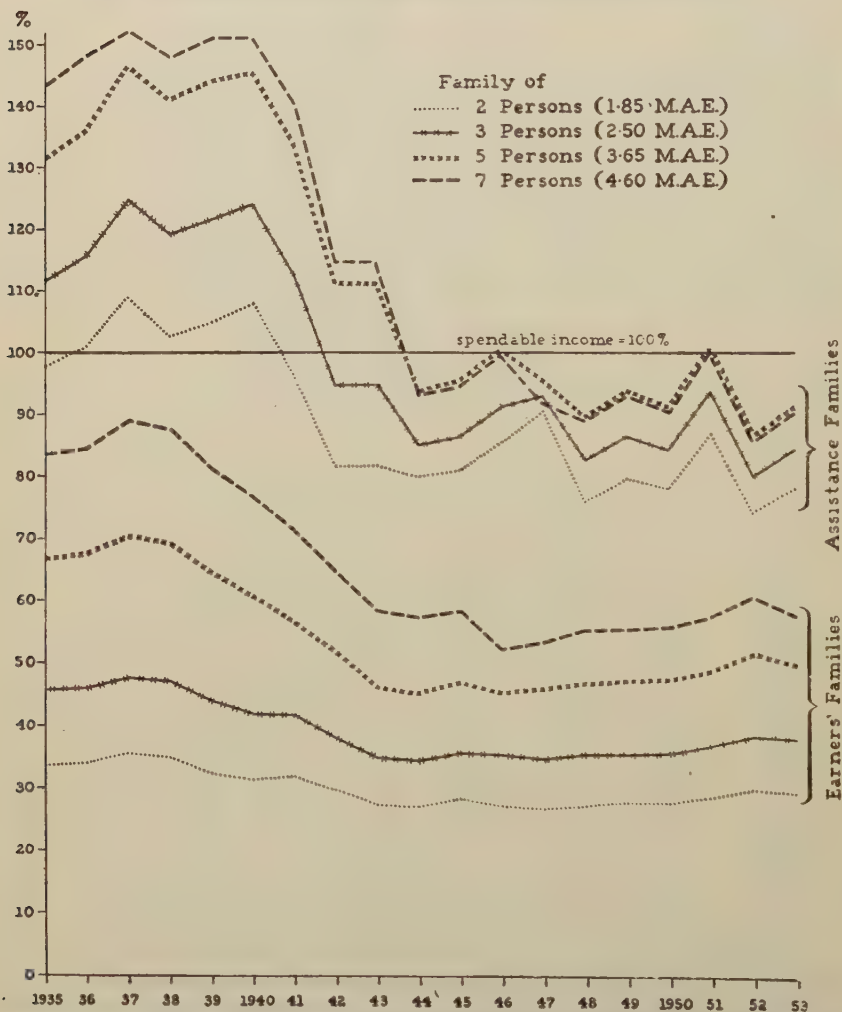
¹ *The Human Needs of Labour* (Longmans 1937).

that could be purchased with it, the 'assistance diet'.¹ These figures of cost of food for the different types of families are set out in Table II.

A comparison of the figures in Table I and Table II makes it clear that the pre-war incomes of large earners' families would not have permitted the purchase of the full earners' diet, while the full assistance diet could have

DIAGRAM B

COST OF EARNERS' DIET AS PERCENTAGE OF SPENDABLE INCOME

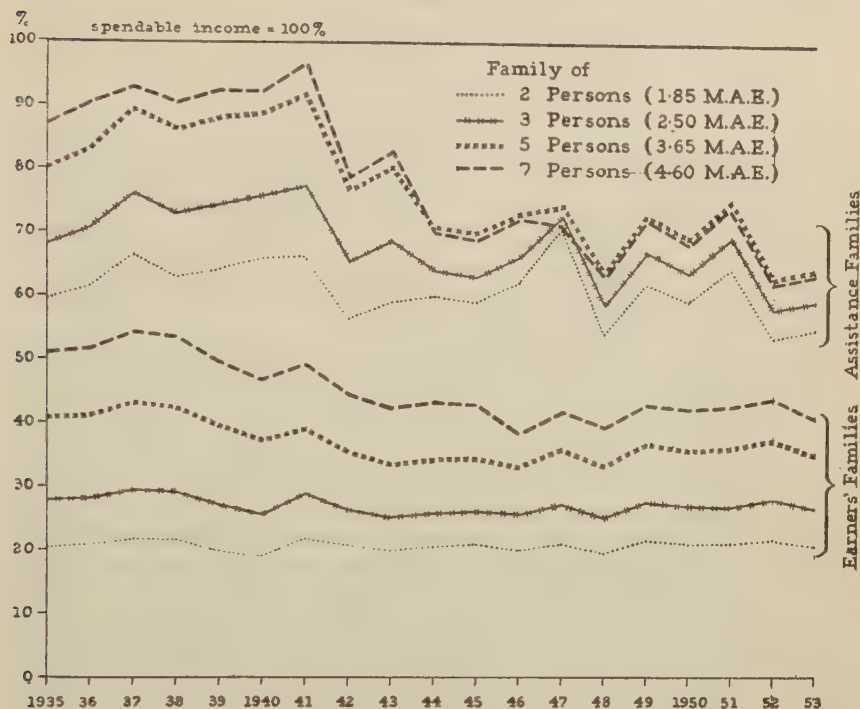


been afforded by the large assistance families only if their need for assistance was but a very short-lived affair and the families managed to forego during this spell nearly all other purchases. The relative magnitudes of spendable incomes and of cost of food are illustrated in Diagrams B and C, which are

¹ For a more detailed discussion cf. Appendix: *Cost of Food*.

DIAGRAM C

COST OF ASSISTANCE DIET AS PERCENTAGE OF SPENDABLE INCOME



based on the figures in Tables I and II. For Diagram B we have taken the figures of earners' food expenditure and related them to the spendable incomes of both earners' and assistance families, equating in all instances the weekly income of the family to 100 and expressing the earners' diet for a family of its size as a percentage of it. In Diagram C we have represented in a similar way the cost of the assistance diets of families of different sizes as percentages of the corresponding incomes of earners' and of assistance families. Both these Diagrams bring out most strikingly the improvement in the positions of the large earners' families and of all the assistance families, since the early years of the war. The sudden sharp peaks relating to the spendable assistance incomes are unlikely to have any special significance; they result from our using for the computation of assistance incomes the uncorrected scale rates ruling in August of each year. Had we been able to plot more accurate curves, on the basis of figures of actual spendable assistance incomes, they would have been much smoother. In particular our data for 1951 probably considerably underestimate the actual incomes of assistance families, since the calamities of the war that compelled families to apply for assistance, often called forth fairly substantial *ex gratia* payments over and above the scale rates, granted the more

freely because assistance claims due to unemployment had been reduced to insignificance. There were then probably very few families receiving assistance whose actual incomes were limited to the strict scale rates for more than a very brief period. Unfortunately the only precise information at our disposal deals with the scale rates and we had to employ these.

A family suffering a sharp but short-lived fall in income might be able to restrict their outgoings during this period almost completely to payment for shelter and food¹; yet such restricted spending could never be practised for long. Even during the warmer season the need arises for meeting the cost of fuel; it will, indeed, have to be disbursed daily if the family's supply is provided by means of slot meters. The actual cost of this item will depend on various factors, especially on the size of the family, the materials used, and the housewife's skill in using them. We have tried to assess the average cost of fuel and lighting in the following way:

For the earners' families we have again made use of figures obtained from the 1937-38 Ministry of Labour survey of working-class expenditure, while for the assistance families we have fallen back on Mr. Rowntree's assessments for 1936 in *The Human Needs of Labour*. The Ministry of Labour survey showed an outlay on fuel and lighting amounting on the average to 9 per cent of the net family income excluding the cost of housing and of National Insurance contributions. We have assumed this proportion to hold good for the average earners' families of two and three persons in 1937, giving for that year a figure of outlay on fuel and lighting of about 5s. per week. The cost of this item normally changes by much less than in proportion to the number of persons per family, particularly in families where it is usual for all the members to share the same living room. We have added for a family of five persons 6d. to the 1937 figure of weekly cost for a family of two or three persons, and for a family of seven persons, we have added 1s.

Mr. Rowntree assessed the cost of fuel and lighting for a low-income family of five persons at 4s. 4d. per week. We reduced this amount by 6d. to 3s. 10d. for a family of two or three persons and increased it to 4s. 10d. for a family of seven persons.

The figures thus obtained for the earners' and the assistance families we adjusted for the other years of our period by means of the Ministry of Labour indices of changes in the cost of fuel and lighting, published in the *Ministry of Labour Gazette*.² The complete sequences thus computed are set out in Table III.

¹ But in the first year of the operation of the Unemployment Assistance Act of 1934, out of the total number of unemployed men aged from 21 years to 64 years in receipt of unemployment assistance (661,940 on May 27th, 1935), almost 50 per cent had been out of work for more than a year, almost 20 per cent for from half a year to a year, and over 11 per cent for from three months to six months. These figures, however, include men with no family responsibilities or with diminished family responsibilities—in that one or several of their children living with them were earners and at that time compelled under the Regulations to contribute to the support of the unemployed member of the family.

² This series of indices is not, strictly speaking, continuous, owing to several adjustments in its internal weighting. The possible error in our figures due to this is, however, bound to be too small to materially affect them.

TABLE III
*Cost of Fuel and Lighting
 Per Family per Week*

Calendar Year	Earners' Families			Assistance Families		
	2 & 3 Persons	5 Persons	7 Persons	2 & 3 Persons	5 Persons	7 Persons
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1935... ..	4 9	5 3	5 9	3 9	4 3	4 9
1936... ..	4 10	5 5	5 10	3 10	4 4	4 10
1937... ..	5 0	5 6	6 0	3 11	4 5	5 0
1938... ..	5 1	5 7	6 1	4 0	4 6	5 1
1939... ..	5 2	5 8	6 2	4 1	4 7	5 2
1940... ..	5 11	6 6	7 1	4 8	5 3	5 11
1941... ..	6 5	7 1	7 8	5 0	5 8	6 5
1942... ..	6 7	7 3	7 11	5 2	5 10	6 7
1943... ..	6 8	7 6	8 3	5 4	6 1	6 8
1944... ..	7 2	7 11	8 8	5 8	6 4	7 2
1945... ..	7 8	8 5	9 2	6 0	6 9	7 8
1946... ..	7 9	8 7	9 4	6 1	6 10	7 9
1947... ..	8 1	8 11	9 9	6 4	7 2	8 1
1948... ..	8 10	9 9	10 8	6 11	7 10	8 10
1949... ..	9 0	9 11	10 9	7 0	7 11	9 0
1950... ..	9 3	10 2	11 1	7 3	8 2	9 3
1951... ..	10 2	11 2	12 3	8 0	9 0	10 2
1952... ..	11 3	12 5	13 6	8 10	9 11	11 3
1953... ..	11 10	13 0	14 3	9 3	10 6	11 10

It may here be worth pointing out that as for food so for fuel and lighting, Mr. Rowntree's figure was intended to represent a low but not a 'minimum' outlay; for his calculations were made not with reference to periods of temporary hardship but in order to indicate, in relation to the size of the families, reasonable limits below which earned incomes should not be permitted to fall. Hence it might be objected that our figures in Table III referring to assistance families overstate the necessary cost of fuel and lighting. However, for an average earner's family suddenly in need of assistance the difference between the earned and the assistance income represents without doubt a step from a normal life to a life of poverty, requiring a great deal of adjustment and unaccustomed frugality. Such a family might well find that a reduction in their habitual outlay on fuel etc., of between 20 and 25 per cent spells about the limit of their adaptability.

IV. THE REMAINDERS

Up to now, we have considered the changes in net incomes in relation to the corresponding outlay required for housing, food, and fuel and lighting, *i.e.*, for items the cost of which has to be met regularly and usually at fairly short intervals, and for which it was possible to make reasonable estimates for families with different income levels and of different composition. The disbursement of the remaining part of the income (hereafter to be called the 'remainder') will be strongly influenced by the structure and the particular circumstances of each family. Even the necessary expenditure on clothing of families of the same size and general standing will vary greatly with the housewives' skill and care, the earners' occupation, the age and sex of

the children. In some families, clothing may be the most important item next to housing, food, and fuel and lighting; in others, its place in the range of priorities may be occupied by household goods; again in others, by the earners' expenditure on tobacco, drink, and betting. Indeed, in quite a few instances much of this margin calculated by us between the net income and the cost of housing, food, and fuel and lighting (to be termed for short 'the main necessities') may be absorbed by additional cost of these main necessities, in particular by cost of housing, when there are general improvements in working-class standards of living. In this context it should be remembered that we have evaluated the cost of the main necessities on bases of pre-war consumption—with, however, two important exceptions: the cost of housing of the assistance families and the cost of food of these families, both of which refer to patterns of current consumption.¹ Since the pre-war period the patterns of working-class consumption have changed very substantially with improved incomes, in quality or quantity or both, but above all, in kind. People now buy largely different kinds of food—ready-to-eat or partly prepared instead of the raw materials for meals—different kinds of household appliances, different kinds of textiles, different kinds of fuel (replacing coal by gas and electricity). Thus when we consider the remainders over the whole period we must realize that they cover not only the outlay on those items not already evaluated by us, but, *in varying proportions*, additional expenditure on the main necessities as well. No price index computed by means of specifically adjusted weights could be contrived capable of materially assisting in defining the real values of these remainders in the course of the years and for the different types of families. We have therefore turned to the *London and Cambridge Economic Bulletin* indices of personal consumption, which provide some general measure of changes in the value of the £ sterling and thus enable us to calculate on a broad basis the purchasing power of these remainders.² But before embarking on this we will consider the current

¹ Hence to the extent to which cost of housing enters into the expenditure covered by the remainders for the earners' families, we have over-estimated the relative sizes of these remainders as compared with the remainders for the assistance families. For from the earners' incomes we have deducted for housing only the relatively small amounts based on the pre-war proportion of working class outlay on housing, while all our figures of spendable assistance incomes exclude the actual current cost of housing of assistance families, so that in the case of these families the remainders are net of all such cost, and the improvements in their standards of living due to better housing, are disregarded. A similar argument does not necessarily arise from the fact that the assistance dietaries since 1941 were compiled so as to fit current patterns of consumption, because the differences of these dietaries from the basic pre-war dietary essentially reflect changes in supplies and changes in the assessments of certain nutritional requirements. Actually, the assistance families as well as the earners' families could well tend to adopt different and more expensive diets than those on which we have based our computations.

² Obviously, the Ministry of Labour index of retail prices, whether exclusive or inclusive of the indices for the main necessities, would be highly unsatisfactory for measuring the purchasing power of the remainders, not only on account of the specific weights on which it is constructed, but also because it makes no allowance for the cost of the many articles not consumed before the war—then either non-existent or, at least, not yet mass produced. The *London and Cambridge Economic Bulletin* indices of personal consumption, which broadly indicate the overall purchasing power of the £ sterling, must certainly come much nearer to measuring the relative values of substantial but unspecifiable agglomerations of consumers' goods, even though these indices cover many items that do not enter into working class consumption.

amounts of the remainders and the relative changes that occurred in them, for each type of family.

The actual amounts per family are shown in Table IV. It will be seen that the figures are negative for assistance families of five persons between 1937

TABLE IV
*Remainders: Current Values
Per Family per Week*

Calendar Year	Earners' Families				Assistance Families			
	2 Persons	3 Persons	5 Persons	7 Persons	2 Persons	3 Persons	5 Persons	7 Persons
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1935 ...	29 9	23 7	12 1	2 7	3 6	3 0	1 0	— 10
1936 ...	30 5	24 0	12 1	2 4	3 1	2 5	2	— 1 10
1937 ...	30 2	23 3	10 7	1	2 2	1 2	— 1 7	— 2 8
1938 ...	31 4	24 4	11 7	11	3 2	2 1	— 8	— 1 10
1939 ...	36 5	29 4	16 3	5 5	2 10	1 8	— 1 3	— 2 7
1940 ...	44 3	37 5	22 7	10 3	2 7	1 5	— 1 9	— 2 11
1941 ...	45 7	39 4	37 9	24 8	3 7	1 7	— 2 9	— 4 11
1942 ...	51 1	47 8	39 3	25 10	8 0	7 0	4 5	4 11
1943 ...	58 0	55 7	48 11	35 5	7 1	5 9	2 7	2 8
1944 ...	58 11	56 6	50 5	36 11	6 9	8 5	8 11	12 7
1945 ...	55 10	53 3	47 4	35 1	6 8	8 6	9 1	12 10
1946 ...	62 0	57 7	53 9	49 3	5 8	7 2	7 2	10 5
1947 ...	67 9	63 0	56 0	50 9	2 9	4 10	7 8	13 6
1948 ...	71 1	65 9	58 2	50 9	11 5	13 7	16 5	22 3
1949 ...	74 0	68 10	60 0	52 10	8 3	9 4	10 3	14 7
1950 ...	79 4	73 2	64 0	55 7	10 6	12 5	14 6	20 2
1951 ...	84 4	78 0	67 8	57 2	7 6	8 8	9 3	13 8
1952 ...	90 8	81 10	68 7	57 2	18 6	22 1	27 1	36 6
1953 ...	98 9	89 1	78 3	69 4	17 4	20 8	24 11	34 1

and 1941, and for assistance families of seven persons from 1935 to 1941.¹ This is so in spite of the fact that our data of assistance incomes already include the extra winter allowances for fuel that were generally granted from the winter of 1937 to January 1944, amounting on the average to about 1s. 3d. per week.² Clearly, up to 1941, families wholly dependent on assistance had to live below the level of assistance consumption as defined by us, and up to 1940 the average earner's family of seven persons had equally to live below the level of earners' average 1937-38 consumption.

The relative improvement in the financial positions of larger families from the pre-war to the post-war period is very noticeable, as is the relative improvement in the financial positions of all the assistance families as compared with those of the earners' families. The changes in these relative levels are illus-

¹ Some answer to the question, how did the families manage to live on such low incomes can be found in the pre-war *Reports of the Unemployment Assistance Boards*. Thus the District Officer for Durham wrote in 1935 (Cmd. 5177, p. 128): "There is little to indicate from the appearance of the children that so many have their fathers 'on the dole.' They appear to be well cared for and reasonably well clothed and shod. This applies also to the adults and adolescents" (in the smaller towns and villages of the Durham district) . . . "The Durham housewife, from sheer necessity, appears to have acquired a technique in household management which enables her to do wonders on a small income. . . . Many of the wives, however, show signs of stress and strain of this continual fight against odds."

² They were given in fact only during the six winter months, usually amounting to between 2s. and 3s. per week.

DIAGRAM D

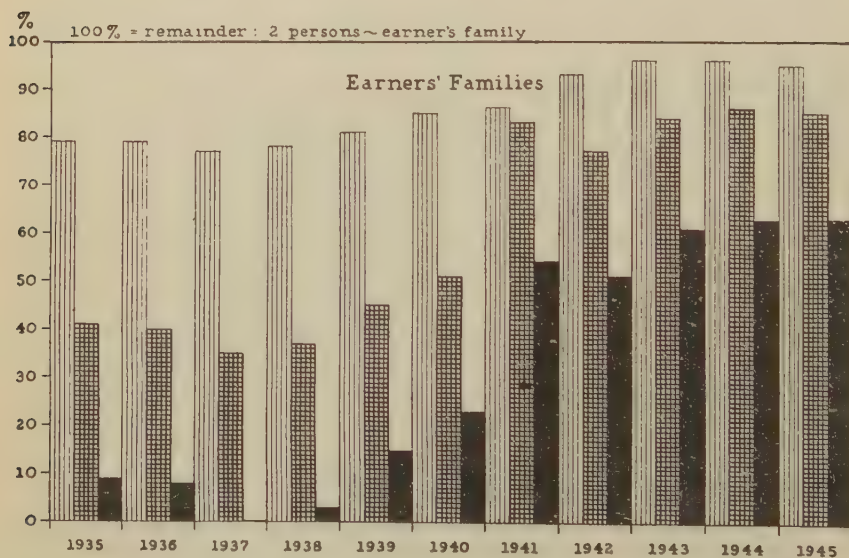
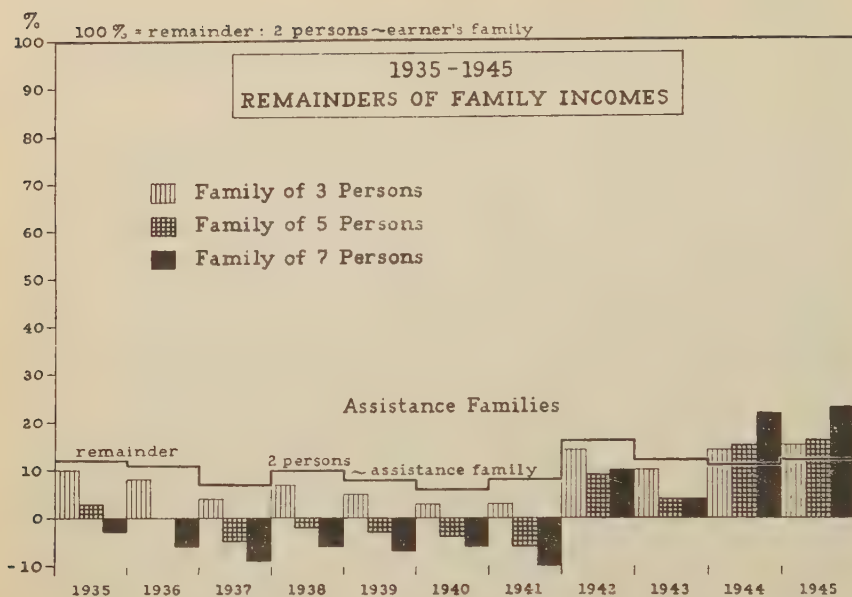
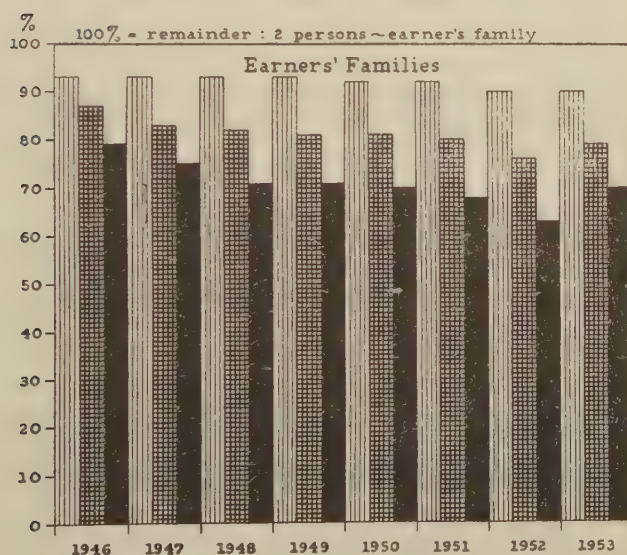
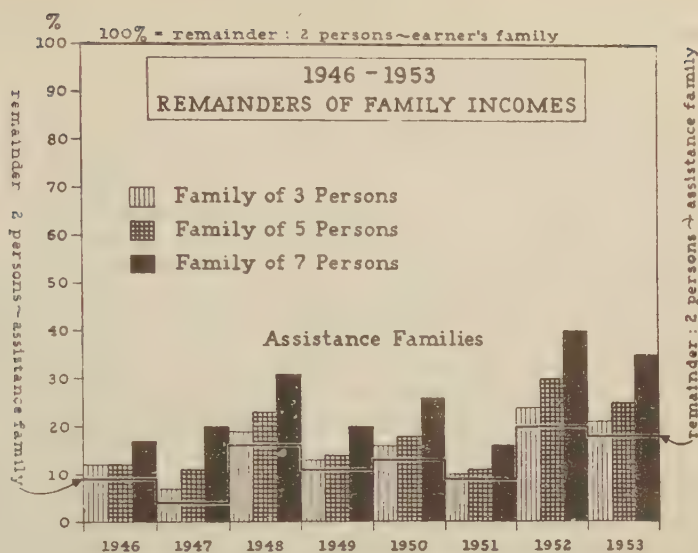


DIAGRAM E



trated in Diagrams D and E, in which the remainders for all families except the two-persons earner's family, are measured against the corresponding remainders for this type of family. In all instances, the remainder for the two-persons earner's family is equated to 100. The upper section of each of the two Diagrams compares with this remainder for the two-persons earner's family, the remainders for the assistance families, and the lower section compares with it, the remainders for the earners' families, of three, five, and seven persons. Only the remainders for families with dependent children are represented in both sections of the two Diagrams in the form of histograms; the remainder for the assistance family of two persons is inscribed in the upper sections in the form of an irregular line, running above the corresponding histogram until 1944 and from then onward intersecting it. This line constitutes the logical parallel to the upper limit of the Diagrams, which represents the remainders for the two-persons earner's family.

The year 1944 clearly brought a new approach to 'human needs' in the field of assistance. Until then the remainder—if any—was in absolute terms smaller for the large than for the small assistance family. From 1944 onward the position is reversed. Moreover, in spite of intermittent fluctuations—which, as we have pointed out, are bound to be exaggerated in our data in consequence of the method of computation which we saw necessary to employ—the underlying trend towards a general improvement in the position of assistance families in relation to earners' families is unmistakable. In 1944, the remainder for the two-persons assistance family represented about 11 per cent and that for the seven-persons assistance family 22 per cent of the remainder for the two-persons earner's family; by 1948, these figures had risen to 16 per cent and 31 per cent respectively; and by 1953, to 18 per cent and 35 per cent.

Naturally, in the case of average earners' families the largest remainder falls to the smallest family. But the impact of direct taxation on the smaller families' incomes since 1940 and 1941, and the introduction of children's allowances towards the end of 1945, considerably improved the relative positions of the larger earners' families.

V. THE CHANGES IN REAL INCOMES

What was the effect of these changes on the families' real incomes after the purchase of the main necessities? Obviously it is from the remainders that we must inquire whether or not the standard of living of the families has improved during the period surveyed—though, of course, we cannot expect answers of a high degree of precision. For apart from changes in the general value of the £ sterling the unit value of the remainders is liable to differ for different patterns of consumption, that is, not only for different types of families but even for the same family in different years. Neither the needs of working-class families nor their preferences are rigidly fixed, and these variations in choice may have a direct bearing on the real value of a family's money income.

In Table V we have set out the value of the remainders for all families in terms of the 1935 purchasing power of the £ sterling, calculated by means of

TABLE V
Remainders: 1935 Values
Per Male Adult Equivalent¹ per Week

Calendar Year	Earners' Families				Assistance Families			
	2 Persons ^a	3 Persons ^a	5 Persons	7 Persons	2 Persons	3 Persons	5 Persons	7 Persons
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1935 ...	16 1	9 5	3 4	7	1 11	1 2	3	— 2
1936 ...	16 0	9 4	3 3	6	1 7	11	—	5
1937 ...	15 2	8 8	2 8	0	1 1	5	—	6
1938 ...	15 6	8 11	2 11	2	1 7	9	—	4
1939 ...	17 7	10 6	4 0	1 1	1 4	7	—	6
1940 ...	18 3	11 5	4 9	1 8	1 1	5	—	6
1941 ...	*17 8	*11 4	7 2	3 9	1 4	5	—	8
1942 ...	*18 6	*12 9	6 11	3 7	2 9	1 10	6	8
1943 ...	*20 2	*14 4	8 4	4 9	2 5	1 5	5	4
1944 ...	*20 1	*14 3	8 5	4 11	2 3	2 1	1 6	1 8
1945 ...	*18 8	*13 2	7 9	4 7	2 2	2 0	1 6	1 8
1946 ...	*19 2	*13 1	8 4	6 0	1 9	1 7	1 1	1 3
1947 ...	19 4	13 3	8 1	5 10	9	1 0	1 1	1 7
1948 ...	18 11	12 11	7 10	5 5	3 0	2 8	2 3	2 5
1949 ...	19 2	13 2	7 11	5 6	2 2	1 9	1 4	1 6
1950 ...	19 10	13 7	8 1	5 7	2 8	2 4	1 10	2 1
1951 ...	19 6	13 4	7 11	5 4	1 9	1 6	1 1	1 3
1952 ...	19 9	13 2	7 5	5 0	4 0	3 7	3 0	3 3
1953 ...	21 1	14 1	8 6	6 0	3 8	3 3	2 8	2 11

¹ The following M.A.E. values have been applied per family: 2 persons, 1.85; 3 persons, 2.50; 5 persons, 3.65; 7 persons, 4.60.

^a The figures marked with an asterisk include the following Post War Credits: Family of 2 persons, 1941, 7d.; 1942, 8d.; 1943, 8d.; 1944, 8d.; 1945, 8d.; 1946, 4d. Family of 3 persons, 1941, 5d.; 1942, 6d.; 1943, 6d.; 1944, 6d.; 1945, 6d.; 1946, 1d.

the *London and Cambridge Economic Bulletin* indices of personal consumption. For the purpose of this Table we have however reduced the remainders per family to remainders per Male Adult Equivalent (M.A.E.), which probably provides a more balanced picture when comparing the real incomes of families of very different sizes. Yet when considering these figures it must not be forgotten that the remainders also cover to a considerable extent family overhead charges—such as additional cost of housing, the outlay on all household articles, the earner's personal expenditure—that may be quite or nearly as large for the small as for the medium and for the large family.¹

Only in Table V are amounts of Post War Credits included in our income figures (*i.e.*, in the remainders). Post War Credits accrued to the average earners' families of two and of three persons from 1941 to 1946. It is reasonable to assume that with the improvements in incomes and the restricted scope for purchases during the war such families would in any case have

¹ It should also be borne in mind that there is a natural difference in the expenditure patterns of otherwise identical earners' and assistance families—independent of differences in incomes—owing to the differences in the personal requirements of the earner when at work and when out of work.

saved something out of their incomes, and we have treated the Post War Credits as though they had been ordinary savings repayable in 30 years' time and carrying a net rate of interest of about $3\frac{3}{4}$ per cent—thus reducing the current values of the Post War Credits to one-third of their nominal values.

As the figures in Table V refer to consumption units, most of the differences in incomes—shown up already in the figures in Table IV—are strongly underlined. The pre-war data demonstrate the crushing effect on the standards of living that was directly attributable to a large number of dependants, not only in the case of families of earners but also in that of families living on unemployment allowances—which allowances, nevertheless, were assumed to supply enough for subsistence. Conversely, direct taxation, the introduction of family allowances, and improved scales of assistance rates exercised a levelling influence on the incomes of different types of families since the early years of the war. During the war, the steep rise in wages and long hours of work raised the real incomes of all the earners' families to unprecedented heights, with a consequent slight fall when the war came to an end and working hours were reduced.¹ For all except the large families dependent on earnings, the level of real incomes, as measured by the remainders, remained fairly stable from 1946 to 1952, but in all instances there occurred a considerable rise in real incomes from 1952 to 1953.

For assistance families, figures for specific years are of less significance than they are for earners' families, for reasons already explained; but it will be seen that the series of remainders for the assistance families break up into three clearly defined sections. First, we have the period from 1935 to 1941—the stage of dire poverty, when the standard of living of assistance families generally fell short of the 'human needs' level, the more so the larger the family. Secondly, there follows from 1942 a period of war-time benevolence, when assistance incomes moved distinctly nearer this level. Lastly, we have the third stage, which started in 1948—reflecting the gradual emergence of the welfare state—and which by 1952 saw the incomes of all the families raised to the 'human needs' level.

VI. CONCLUSION

We embarked on our task with the intention of obtaining some idea of the standards of living of certain working-class families of different sizes when dependent on earnings and when dependent on assistance, and of the changes in the relative positions of these standards, in the course of a period of 19 years. Inevitably, the material employed was rough and we refrained

¹ The fact that compared with the years of high war-time earnings the real income position of all the earners' families deteriorated somewhat in the post-war years up to 1952 may throw some light on the psychological background of the post-war complaints about insufficient incomes. As more goods became available there was a little less purchasing power in the wage earners' pockets than had come to be taken for granted, and the high war-time consumption of certain luxuries that since before the war had risen steeply in price—especially tobacco and drink—had to be curtailed to purchase items that now were more desirable or necessary.

from any elaborate attempt to smooth it down, so as not to render our basic figures suspect. Hence it would be inadvisable to make use of our data for demonstrating subtle points; but our concept of remainders has provided a means for broadly assessing and comparing the real standards of living of families of different types over a considerable period.

During the whole of this period, the average earner's income never fell below the amount required for the satisfaction of 'human needs', even in the case of a family with five dependent children; but before the war the 'human needs' standard was the most that such a family could afford.¹ Thus although compared with the pre-war standards of assistance families—compelled to live below this standard—the average earner's family with five children must still have appeared reasonably well off, it was very poor in relation to the average earners' families with fewer children, whose consumption patterns could attain, or at least more closely approach, the working-class pre-war pattern of average consumption. However, in 1953 the real value of the weekly income remainder of such a seven-persons earner's family, left after deducting from their net income the average working-class outlay on housing, food, and fuel and lighting (based on 1937-38 consumption data), amounted to more than 10 times its 1935 value.² The relative increases in income of earners' families of smaller size were much less spectacular. In the case of the two-persons earner's family, the years of the highest war-time and post-war earnings produced an increase in the real value of the remainders of only 25 per cent, as compared with the value in 1935; for the three-persons family this increase amounted to about 50 per cent, and for the five-persons family, to 150 per cent.

Throughout the whole period we assessed the expenditure of earners' families on housing, food, and fuel and lighting, on the basis of average consumption data of working-class families in 1937-38. In a similar way, we computed the expenditure by assistance families on food, and fuel and lighting, on the basis of data published by Mr. Rowntree in 1937, and by us in this BULLETIN, in relation to food, since 1941. Up to 1941, this 'human needs' consumption would have left the assistance families of two or three persons with only about 2s. or 3s. per week—and sometimes less—in terms of 1935 purchasing power, after paying for housing, food, and fuel and lighting, while the larger assistance families would actually have incurred net losses. However, during the war the real values of assistance incomes increased, and they rose further after 1947, until by 1952 even the family wholly dependent on assistance could count on an income that, as Mr. Rowntree suggested in 1937, should enable a man "to marry, live in a decent house, and bring up a family . . . in a state of physical efficiency, while allowing a reasonable margin for contingencies and recreation."³

Our figures have shown that the differences between the incomes of average earners with families of different sizes, and the differences between

¹ Cf. Diagrams B and C. ² As it did also in 1946.

³ *The Human Needs of Labour*, p. 130.

their earned incomes and the assistance incomes to which such families are entitled in case of need, have both become very much smaller than they were before the war. Actually, we have still somewhat overstated these differences, for in comparing the real incomes of small and of large families we have made no allowance, or insufficient allowance, for the welfare services for children¹ and the introduction of free higher education, and in comparing the incomes of earners' and of assistance families, we have disregarded the increases in the grants for housing to assistance families resulting from higher post-war standards of working-class accommodation. We may also have somewhat underestimated the war-time increases in the actual cost of pre-war working class (earners') diets as compared with the corresponding increases in the cost of the 'human needs' (assistance) diets.² Some degree of imprecision is clearly inevitable in a survey extending over nearly two decades and concerned with data that are largely determined by human behaviour; it does not, however, invalidate our conclusions.

Poverty, in the sense in which the term was understood before the war, has been abolished for families of the types considered in this paper. Moreover, the incidence of *relative* poverty, which before the war tended to discriminate sharply between the small and the large family, and between the family dependent on earnings and the family dependent on assistance, has lost much of its force. To consider whether its edge could be blunted further is a matter outside the scope of this survey.

APPENDIX

Gross Earnings

Our figures of gross earnings are based on the data of average weekly earnings of male workers in industry, aged 21 years and over, published at intervals for specified sampling weeks in the *Ministry of Labour Gazette*. Such data are available for October 1935, October, 1938, July 1940, July 1941, and from 1942 onward bi-annually, first for January and July of each year and since 1946 for October and April. From these data we have interpolated figures of weekly earnings per financial year in the following way: for the financial years of 1935-36, 1938-39, and 1948-49, we have assumed that the Ministry of Labour data—about half-way through the financial year—represent sufficiently closely the actual gross earnings for the average normal working week during the particular year to be adopted as such for the purpose of this study. For 1936-37, 1937-38, and 1939-40, no official data were published. For these years we have allowed for a steady rise in pre-war earnings (amounting to about 2½ per cent), within the limits of the range

¹ The only allowance made for these services in our computations is the assumption that the children of the assistance families would consume milk at school, obtained from 1941 to the middle of 1946 at a cost of 1½d. per pint and since then free of charge.

² For all the families, we have disregarded the relatively slight improvements in standards of living due to improved National health services. (The total expenditure on medical and related items amounted to about 2 per cent of the net expenditure of the families covered by the 1937-38 Ministry of Labour survey.)

set by the official data for 1935 and 1938. This rise has been assumed to have continued until October 1939. At that point we allowed for the steep upward trend of earnings under the impact of war-time requirements. This trend we calculated by means of our figure for October 1939 and the average figure for 1940 and 1941, derived from the official data for July 1940 and July 1941—again assuming a steady increase during this latter period. Since we are concerned only with annual averages the assumed concentration of the boom in earnings in the second half of the financial year of 1939-40 cannot seriously distort our final figure for that year.

For those years for which we have official data of earnings for July and January, we have taken the average of these two, and for the years for which the official data refer to sampling weeks in April and October, we have taken the average of two succeeding April data only.

Earners' Net Incomes

We have assumed that to a man regularly at work 50 times the weekly gross earnings would be available for each financial year—thus allowing for an occasional interference with the normal flow of earnings during slack periods.¹ From these annual figures we have deducted the worker's contributions to National Insurances, and also the income tax (including the Post War Credit deductions) to which families of two and three persons became liable, the family of two persons since 1940 and that of three persons since 1941. From mid-November 1945 we have added for families with three and with five children the appropriate family allowances. The resulting totals for financial years have been transposed into totals for calendar years by the simple expedient of weighting the figures for two successive financial years, the main financial year by 3 and the preceding financial year by 1, and dividing the result by 4. The figures thus obtained and divided by 52 represent our averages of weekly 'net' earned incomes.

The term 'average' as employed in this context calls for some explanation. It might be thought that in computing workers' net incomes some correction was called for to take account of prolonged periods of absence from work, owing to serious illness, unemployment, strikes, etc. To do this would, however, give to our figures a meaning different from that intended. For we are here concerned only with the earned income obtained while a man is actually working, and our figures of net earnings are conceived as the net counterpart, per calendar year, of the official data of average earnings published by the Ministry of Labour.

Assistance Incomes

No data are available from which to compute the actual average incomes of families receiving public (now : national) assistance. There are, of course, the official scales of weekly allowances; but in assessing the needs of an applicant neither the old Unemployment Assistance Board nor the National

¹ Some allowance for such loss of earnings is, however, already included in the Ministry of Labour averages, which are derived from the actual earnings of all employed during the sampling week, including those whose earnings were affected by working time lost during that week.

Assistance Board would take into account every shilling of other income, either earned or received from elsewhere, and the sums thus disregarded could be fairly substantial in individual cases. Moreover, the basic principle underlying the functioning of the Assistance Boards is to provide help according to need and not according to a rigid code of law. Thus *ex gratia* allowances in money or in kind have always been forthcoming when circumstances seemed to call for urgent help, irrespective of considerations of strict justice. Lastly, at no time was the cost of housing an applicant for assistance allowed to absorb more than a defined proportion of his scale allowance, and an additional grant was made as of right to cover the cost of housing¹ above that limit, provided the total outlay on housing was considered necessary. Again, in assessing a family's housing requirements no inflexible yardstick was applied; on the contrary, a very considerable degree of latitude was and is permitted to do justice to any special circumstances. Since 1944, the scales of assistance allowances exclude all allowances for housing, which instead are given as an extra grant, usually covering the rent commitments in full, or if the applicant is buying his house, his net mortgage interest—excluding the amortisation of capital—and rates.

In any case, even with more complete data of the actual incomes of families receiving assistance, the computation of average weekly assistance incomes per year would almost inevitably result in figures liable to be highly misleading, at least for periods such as we are considering, when assistance rates were changed fairly frequently so as to keep pace with both changes in the cost of living and changes in the concept of social justice. For it would be difficult to give a concrete meaning to such averages *per annum*, which, in fact, might suggest that it is normal for a man of working age, and father of a young family, to live on an assistance income throughout the year. We therefore decided to fall back on specific scale rates and adopted those ruling in August of each year. No allowance has been made by us for increases in the scale rates after August, in the year of their introduction. The adoption of such uncorrected figures is, of course, bound to make changes from one level of rates to another more abrupt than they are likely to have been in fact. Since however much of our numerical material is represented in graphs, such sharp breaks are easily smoothed out, should the reader desire to do so.

All the main scale rates that applied during the period are set out with the month and year of their introduction, in Table 1.²

¹ *I.e.*, rent, rates, mortgage interest, cost of essential repairs.

² It might be argued that our figures of assistance incomes in the pre-war years over-estimate the incomes of certain families dependent on assistance, because we have taken no account of the 'wage stop'—the ruling which laid down that no applicant for assistance should be granted as much or more than would be his normal earnings. This clause was, of course, included in the Regulations in order to prevent the granting of assistance acting as a disincentive to regular work. The Assistance Board, however, instructed their officers that a family with five or more dependent children should in itself be regarded as a sufficient departure from the normal to justify the waiving of the clause—and it was naturally the large families for which the assistance scale tended to add up to more than the earners' normal wages. The number of families whose allowances were actually affected by the wage

[Footnote continued on following page.]

TABLE 1
Weekly Rates of Assistance

Year	Month	Husband and Wife	Dependent Children	
			under 5 Years (Lowest Rate)	11-14 Years (Highest Rate)
1935	January	s. d. 24 0	s. d. 3 0 ¹	s. d. 4 6 ¹
1936	November	24 0	3 0 ²	4 6 ²
1939	November	26 0 ³	3 6	5 0
1940	November	28 0	3 9	5 3
1941	June	30 0	3 9	5 3
1942	August	35 0	4 9	6 3
1944 ⁴	January	31 0	5 6	9 0
1946	December	31 0	7 6 ⁵	10 6 ⁵
1948	July	40 0	7 6	10 6
1950	June	43 6	8 6	12 0
1951	November	50 0	9 6	13 6
1952	June	59 0	11 0	16 0

¹ 1s. was deducted from the scale rates for every member in excess of five, dependent on assistance.

² The 1s. deduction referred to in footnote¹ was abolished.

³ In addition, a winter allowance amounting on the average to between 2s. and 3s. per family per week was granted during 6 months, from 1937 to January, 1944.

⁴ The scale rates since January 1944 are exclusive of all cost of housing.

⁵ Since November 1945, the scale rates for children are inclusive of the general children's allowances.

Cost of Housing

No comprehensive data of the actual cost of housing families in receipt of assistance are available. But even if they were, averages calculated by means of them could not in justice be included in figures of assistance incomes purporting to indicate the standard of living of typical families, since the cost of housing disbursed by individual families varies widely and is now often quite beyond their control; this, indeed, was the case even before the war, at least in the short run. Of course, the absolute cost of housing earners' families is likely to show in individual cases differences as wide as those obtaining for families in receipt of assistance. Nevertheless, if we want to compare incomes from earnings and incomes from assistance we have to either add some figure of cost of housing to the scale assistance incomes since 1944 or deduct some such figure from the earned incomes. Clearly, the relative errors inevitable in such an adjustment would be much larger if it were made by adding the cost of housing to the assistance incomes than if it is brought about by a corresponding deduction from earned incomes,

Footnote 2 continued from previous page:

stop was always small, and even in these cases *ad hoc* grants, when need made them inevitable, might have raised the families' actual incomes over a period to the level of the ruling scale rates. In the context in which the figures of assistance incomes are employed by us it seemed justifiable to consider the assistance scale allowances, as defined, as the normal minimum incomes; for at no time would the wage stop have been applicable in the case of families of the types with which we are concerned, *i.e.*, families up to seven persons whose sole earner, when working, enjoyed earnings amounting to the average of the industrial earnings of male adults.

since the proportion of total expenditure taken up by the cost of housing is necessarily far greater in the former instance than in the latter. We therefore have excluded from *all* the data of incomes used for our comparisons the cost of housing, which we computed as follows :

From the assistance incomes from 1935 to 1943, we have taken one-quarter of the 1935 scale rates applying to each type of family. This corresponds to the standard housing allowance included in the scale rates, which, however, was liable to various adjustments; in particular, it could rise to over 31 per cent for a family consisting of only husband and wife and to nearly 27 per cent for a family with one child. On the other hand, it could amount to less for families whose cost of housing was very low, as the deductions prescribed in such cases did not always take full account of the difference. The absolute figures of standard housing allowances based on the 1935 scale rates ruled during the whole period, since when in the years between 1935 and 1944 the rates were raised the additional benefit was intended to compensate for rises in the cost of food and other items which had become noticeable dearer; the cost of housing rose by only a few per cent in the course of these eight years, owing to the operation of rent control. Some change in the basic housing allowance included in the scale rates occurred however in mid-November 1936, for families with more than three dependent children. Until then, such families had a shilling per week deducted from their scale allowances for each additional dependant. This cut was restored in November 1936 and the increase thus obtained became also liable to the 25 per cent assessment for cost of housing. We have allowed for this in our deductions from the assistance incomes between 1937 and 1944.

In calculating our figures of cost of housing for earners' families we have made use of the information on average outlay on housing supplied by the Ministry of Labour survey of working-class household expenditure in 1937-38. The families covered by this survey consisted on the average of 3.8 persons, including one dependent child and 1.8 earners; their outlay on housing per family per week amounted to 10s. 10d., or 13 per cent of their net income excluding the earners' contributions to National Insurances. We have assumed that families with only one breadwinner enjoying average earnings would also have incurred in 1937 an average outlay on housing of about 13 per cent of their net incomes, amounting, in their case, to 8s. 2d. per week. The corresponding outlay on housing in earlier and in later years we assessed on this base by means of the Ministry of Labour index of changes in the cost of housing.

Our figures of the cost of housing of earners' families take no account of the gradual improvements in housing conditions during the period and the rise in cost due to this. Housing standards of working-class families are certainly higher now than they were before the war¹ and average expenditure on housing may have gone up correspondingly. Indeed, the average rent

¹ The number of persons per room in England and Wales fell from 0.83 in 1931 to 0.73 in 1951, and the percentage of persons living more than 2 per room fell from 6.94 to 2.16.

(including rates) of householders in receipt of assistance at the beginning of November 1953, was 12s. 2d. per week, *i.e.*, it was 2s. 3d. above the average cost of housing assumed by us for earners' families in 1953. But there is no break-down of this figure with respect to families of different sizes; neither have we data showing the cost of all housing—rented, owned, and being bought—of such families. In any case, the point at which an adjustment of pre-war housing expenditure should be made on account of actual changes in housing standards could be settled only by an arbitrary decision, and there would be little solid ground for such a step.

Cost of Food

Our figures of food expenditure of earners' families are also based on information supplied by the Ministry of Labour survey in 1937-38. This survey showed the weekly outlay on food per family to have amounted to 34s. 1d. From this we obtained a weekly outlay per Male Adult Equivalent (M.A.E.) of 10s. 7d.—taking the M.A.E. value of males aged 14 years and over as 1.00, that of females aged 14 years and over as 0.85, and that of the one child, as 0.65. In order to obtain our figures per family we multiplied the outlay per M.A.E. with the M.A.E. values per child according to the number of children in the family. For a family with only one child, we took this value as 0.65, reducing it to 0.60 in the case of three children and to 0.55 in the case of five. To allow for some such adjustment in the expenditure for a child in relation to the total number of children seemed to us more realistic than to take a standard value per child irrespective of the number of children per family, since, for various reasons, catering for a large family—especially for one with a large number of young children—allows of certain economies that are very difficult or even impossible to attain in a smaller family.

We assumed that the figure of 10s. 7d. applied to the average outlay in 1937, and adjusted it for earlier and for later years by means of the indices of the retail price of food published in the *London and Cambridge Economic Bulletin* (based on the Ministry of Labour data of retail prices and working-class consumption).

The same M.A.E. values are used for the assistance families. Our figures of food expenditure of these families from 1935 to 1940 are derived from the figure of cost of 'human needs' nutrition in 1936, published by the late Mr. S. Rowntree in *The Human Needs of Labour*, for a family consisting of husband, wife, and three children of school age. We again adjusted the basic figures of cost—in this case the figures for 1936—for differences in the cost of food in 1935 and in the years from 1937 to 1940, with the aid of the index mentioned above. A comparison of such structurally different data is bound to yield results that fall far short of perfection. Unfortunately, however, we have no better means of measuring changes in the cost of working-class food than indices based on the Ministry of Labour data. Under rationing, these index figures were artificially depressed because in computing them heavily

TABLE 2
Weekly Cost of Food per M.A.E.

Calendar Year	Earners' Families	Assistance Families
	s. d.	s. d.
1935 ...	9 6	5 10
1936 ...	9 10	6 0
1937 ...	10 7	6 6
1938 ...	10 8	6 6
1939 ...	10 11	6 8
1940 ...	12 5	7 7
1941 ...	13 2	9 0
1942 ...	13 4	9 3
1943 ...	13 4	9 8
1944 ...	13 4	10 1
1945 ...	13 7	9 11
1946 ...	14 4	10 5
1947 ...	15 2	11 10
1948 ...	16 6	11 9
1949 ...	17 3	13 4
1950 ...	18 5	13 11
1951 ...	20 5	15 2
1952 ...	23 8	17 1
1953 ...	24 11	17 7

subsidized foods were given their pre-war weights, although they could only be bought in much smaller quantities. At the same time, the incidence of rationing bore very differently on the *actual cost* of low grade and of high grade diets, raising it more for the former than for the latter, both because of price fixing¹ and because of the principle—realized as far as possible—of ‘equal shares of everything for everybody’. Substitution under these conditions meant in practice that families with low standards of living bought more semi-luxury foods than they would have done in a free market, and families with higher standards of living less. This enforced substitution of relatively cheaper for relatively dearer foods in the consumption patterns of families above the ‘human needs’ standard must have counteracted to some extent the impact of the true rise in food prices on the total cost of their diets.²

¹ Which took small account of differences in quality, with the result that price ranges for specific items tended to shrink into insignificance.

² If, however, we were to allow for an ‘equivalent’ substitution—by the nearest culinary and not only by nutritionally suitable substitutes—the rise in cost would appear substantially higher than is shown by the Ministry of Labour index figures. Cf. T. Schulz, *The Cost of Inexpensive Nutrition Before and After the War*. BULLETIN, Vol. 14 No. 7. Obviously, such ‘perfect’ substitution could not have been attained generally during a period when practically all foods of special culinary appeal were in short supply.

A 'HUMAN NEEDS' DIET: SPRING 1955

By T. SCHULZ

Our 1955 Spring survey of the cost of a 'human needs' diet was carried through in the second half of March. Supplies of foods in the lower price ranges were plentiful and markets highly competitive; consequently, variations in prices—mostly slight, though occasionally very substantial—were common. The generally high standard of living benefits the purchaser of small means, since it reduces the demand for many wholesome yet inexpensive foods. During the period of our survey, this was very noticeable with respect to meat. Many boiling cuts even of home produced meat, as well as all kinds of cuts of frozen imported meat, were cheap. Stewing meat could be had for 10d. a lb., mutton suet for 6d., and pieces of fat boiling bacon for less than a shilling a lb.—sometimes for as little as 6d. or 8d. In spite of this, in computing the cost of our 'human needs' diet, we allowed for an average price of meat of 2s. a lb., since the impression was gathered that these cheap meats were often insufficiently appreciated by the housewives of poor families, who tended to underrate both their nutritional value and their culinary possibilities.

Our dietary has again been compiled for a family consisting of husband,

Weekly 'Human Needs' Diet for 5 Persons—Spring 1955

	Quantity	Average Price per Unit ¹	Changes since Autumn 1954	
			Quantity	Outlay
		s. d.		s. d.
1 Meat, butcher's† ² ...	4 lb	2 0	...	— 8
2 Bacon, boiling* ...	2 lb 8 oz.	1 6	+ 8 oz.	— 3
3 Sausage or Sausage Meat, beef ...	...	...	— 8 oz.	— 10½
4 Herrings, fresh* or cured ...	1 lb 8 oz.	1 0	...	...
5 Eggs* ...	6 eggs	3½	+ 3 eggs	+ 7½
6 Cheese ...	1 lb 12 oz.	1 8	+ 2 oz.	— 1
7 Milk, ordinary ...	16 pt.	7	...	...
8 Do., school ...	5 pt.	free	...	...
9 Do., condensed skimmed ...	1 tin ³	10½	...	+ 0½
10 Margarine ...	2 lb 4 oz.	1 4	...	...
11 Dripping and Suet* ...	9 oz.	1 4	— 3 oz.	...
12 Bread ...	19 lb 4 oz.	7½	...	...
13 Flour ...	3 lb	1 5	...	...
14 Rolled Oats* ...	2 lb 8 oz.	8	...	— 1½
15 Other Cereals† ...	1 lb 4 oz.	10	...	— 1½
16 Dried Legumes* ...	2 lb	11	...	— 2
17 Potatoes* ...	21 lb	1 4	...	+ 9
18 Fresh Vegetables* ⁴ ...	14 lb	5	...	+ 1 2
19 Sugar* ...	3 lb 4 oz.	7½	...	...
20 Tea ...	8 oz.	3 0	...	+ 2
21 Other Foods ⁵ ...	...	3 5	...	+ 1½
Total Outlay ...		63 0		+ 6

¹ The price unit is: eggs, one egg; fresh milk, pint; condensed milk, tin; bread, 1½ lb loaf; flour, 3 lb bag; potatoes, ½ stone; tea, ½ lb; 'other foods', total cost.

² The food groups marked † could be purchased at a lower unit price than stated everywhere, by concentrating largely on the cheaper items of the group; those marked * could be purchased at a lower price in some places.

³ 1½ pints equivalent.

⁴ Cabbage, swedes, turnips, parsnips, carrots, onions.

⁵ ¼ lb cocoa, ¼ lb syrup or jam, ½ lb dried fruit or 1 lb cooking applies, condiments.

wife, and three children of school age. The prices for computing its cost were collected in Oxford, London, and a number of other towns in the southern Midlands. It will be seen that the dietary differs little from that for the autumn of 1953.¹ We have allowed an additional three eggs, because eggs were in season and relatively cheap, and also some more bacon and cheese, both of which, too, had declined in price. These increases are counter-balanced by omitting from the Spring dietary sausage meat and reducing slightly the amount of cooking fats. Meat foods in general had become cheaper than they were in the autumn of 1954; but potatoes and common fresh vegetables showed seasonal rises in price. Nevertheless, such culinary 'substitutes' for vegetables as dried legumes and various cereal foods, had slightly declined in price. Dried fruit had become a little dearer; but in this case the rise in price seemed to be accompanied by corresponding improvements in quality. Tea, after a brief interval of very high prices—which had come to an end before the beginning of our survey period—settled down at a price level that, for the least expensive brands, lay between 4 and 5 per cent above the level in the preceding autumn.

The total weekly cost of the diet amounted to exactly 63s.; *i.e.*, it cost 6d. more than an equivalent diet in the autumn of 1954.

ERRATUM

BULLETIN Vol. 17, No. 2. T. Schulz: *The Means of Subsistence*, p. 221, 4th line from bottom of page:

For '1951' read '1941'.

¹ Cf. A 'Human Needs' Diet: BULLETIN, Vol. 16, Nos. 11 and 12.